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UNIVERSITY OF ALBERTA

ADAPTATION AND FUNCTIONING IN FAMILIES: A RURAL PERSPECTIVE

BY

CAROLINE J. REDINGTON

a thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of Masters of Education.

IN

SPECIAL EDUCATION

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA

SPRING 1992

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UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled ADAPTATION AND FUNCTIONING IN FAMILIES: A RURAL PERSPECTIVE submitted by Caroline J Redington in partial fulfillment of the requirements for the degree of Master of Education in Special Education.

Dr. G. M. Kysela

Dr. L. McDonald

Joyce Magill-Evans
Dr. J. Magill-Evans

April 16, 1992

Dedication

This thesis is dedicated to families: my own; those I met while undertaking this project; and those I have yet to meet. Special thanks are extended to my husband, Lynn, whose sacrifices were many and support greatly appreciated. The steadfast support and encouragement from my parents, Agnes and Tony, instilled in me the desire to learn and the confidence to succeed. The strength, courage, and openness of the families I have met during the course of this research will continue to be an inspiration for many years to come.

Abstract

The present study was undertaken to test the validity of the T-Double ABCX model as well as evaluate its clinical utility as a framework for assessing family needs and planning family goals in early intervention. Measures related to the dimensions of the model and a measure of family service needs were administered to 44 rural families of children with special needs. Correlation analyses were used to determine the degree of similarity between the observed relationships and those hypothesized in the model, and between measures of the model and a measure of expressed service needs. A series of preliminary analyses were also conducted to evaluate (a) the homogeneity of the present sample [i.e., mother-father differences], (b) the representativeness of families in the current study relative to families in the norm group, and (c) the similarity between parents in the present study and parents in two recent investigations that used the T-Double ABCX model (McClelland, 1990; Reddon, 1989).

Results indicate that mothers and fathers were homogeneous on measures representing the model and perceived family service needs. Moderate to high levels of resources, capabilities, and family functioning were indicated for both mothers and fathers. Mean scores on the self report measures for mothers and fathers in the present study and parents in the norm groups and prior studies were similar, although a number of exceptions were noted. Correlation analyses indicated moderate support for the validity and clinical utility of the model. The pattern of observed relationships between the dimensions of the model and a measure of family adaptation were generally consistent with hypothesized patterns. A consistent pattern between family needs identified by parents and family needs inferred from measures of the model were observed. Results are discussed in terms of implications for future research and clinical practice.

Acknowledgement

This project would not have been possible without the cooperation and assistance of many people. I would like to thank the administration and staff of the Sturgeon Health Unit for their enthusiastic support and cooperation in the undertaking of this project. I would also like to extend my thanks to Dr. Gerard Kysela, thesis advisor, for his support, expertise, and willingness to share his vision of services for families. Gratitude is expressed to Drs. Linda McDonald and Joyce Magill-Evans (committee members) for their participation and willingness to contribute their ideas to the final writing of this thesis.

TABLE OF CONTENTS PAGE

RELEASE FORM.. i
TITLE PAGE.. ii
SIGNED COMMITTEE APPROVAL PAGE.................................... iii
DEDICATION iv
ABSTRACT.. v
ACKNOWLEDGEMENTS... vi
TABLE OF CONTENTS... vii
LIST OF TABLES.. x
LIST OF FIGURES... xii
CHAPTER I - OVERVIEW.. 1
  The Problem... 1
  Statement of the Problem... 2
CHAPTER II. REVIEW OF THE LITERATURE............................... 3
  Introduction.. 3
  Predominant Conceptual Frameworks..................................... 4
    The Cognitive-Processes Framework................................. 4
    Support for the Cognitive Processes Framework.................. 5
    The Ecological-Systems Framework.................................. 8
    Support for the Ecological-Systems Framework.................... 15
    The T-Double ABCX Model... 17
    Support for the T-Double ABCX Model.............................. 23
  Synthesis of the Literature... 26
CHAPTER III. RATIONALE AND RESEARCH QUESTIONS................ 27
  Phase I Preliminary Analysis.. 27
  Phase II Validity of the T-Double ABCX Model........................ 28
  Phase III Clinical Utility of the T-Double ABCX Model................. 30
  Research Questions... 30

CHAPTER PAGE
CHAPTER IV. EXPERIMENTAL DESIGN AND METHODOLOGY......... 32
Participants.. 32
Procedures.. 33
Instruments... 34
Pile Up Dimension 34
Personal and Family Resources and Community Resources ... 36
Situational Appraisals and Global Orientation 37
Problem Solving and Coping...................................... 39
Family Adaptation.. 40
Perceived Service Needs... 41
Data Analysis.. 42
Limitations in Correlational Research Designs.................. 45
CHAPTER V. RESULTS.. 47
Description of Participants....................................... 47
Parents... 47
Children.. 48
Phase I Preliminary Analyses...................................... 49
Location Analyses.. 50
Measures of Pile-Ups: The AA Factor............................ 50
Measures of Family Strengths, Resources and Capabilities.... 55
Measures of Situational Appraisals and Global Appraisals...... 59
Measures of Problem Solving and Coping........................ 61
Measures of Family Adaptation................................... 63
Phase II--Validity of the T-Double ABCX Model.................. 67
Intercorrelation Trends.. 67
Correlation Analyses 68
Phase III Clinical Utility of the T-Double ABCX Model 74
Comparative Analyses.. 74
The Family Needs Survey... 74
Correlation Analyses... 74
CHAPTER VI. DISCUSSION.. 79

CHAPTER PAGE
Phase I Preliminary Analyses 79
Phase II Validity of the T-Double ABCX Model 82
Phase III Clinical Utility of the T Double ABCX Model 85
Limitations 87
Implications and Directions for Future Research 88
REFERENCES 91
APPENDIX A 99
APPENDIX B 107
APPENDIX C 112
APPENDIX D 115
APPENDIX E 120

LIST OF TABLES

TABLE PAGE

1. Comparative Analyses of Mean Scores on the Child Domain of the PSI..... 51
2. Percentile Ranks for Mothers and Fathers on the Child Domain of the PSI.. 53
3. Comparative Analysis of Parental Responses on the FIRM..... 56
4. Comparative Analysis of Parental Responses on the SSI. 58
5. Comparative Analysis of Parental Responses on the LOT and FCOPES..... 60
6. Comparative Analysis of Parental Responses on the CHIP..... 62
7. Comparative Analysis of Parental Responses on the FAM III..... 64
8. Correlation Matrix for Parental Scores on the Critical Dimensions of the Model..... 70
9. Percentage of "Very Important" Responses by Item for Mothers and Fathers..... 75
10. Intercorrelation Matrix for Parental Scores on the FNS 77

APPENDIX A

A-1. Measures representing the Dimensions of the Model and Family Service Needs. 106

APPENDIX B

B-1. Summary of Selected Parent Demographic Characteristics..... 108
B-2. Summary of Selected Child Demographic Characteristics..... 109
B-3. Identified Need Areas..... 110
B-4. Results of the one-way ANOVA..... 111

APPENDIX C

C-1. Comparative Analyses of Mean scores between Mothers and Fathers and Husband-Wife pairs..... 113

APENDIX D

D-1. Intercorrelation matrix for the PSI 116
D-2. Intercorrelation matrix for the FIRM..... 116
D-3. Intercorrelation matrix for the SSI 117
D-4. Intercorrelations within the Resources Dimension..... 118
D-6. Intercorrelation matrix for the FAM..... 119

APPENDIX E

E-1. Correlation Matrix for Parental Scores on the FNS and the PSI..... 121

TABLE PAGE
E-2. Correlation Matrix for Parental Scores on the FNS and the FIRM.... 121
E-3. Correlation Matrix for Parental Scores on the FNS and the SSI....... 122
E-4. Correlation Matrix for Parental Scores on the FNS and Measures Related to the Appraisal and Coping Dimensions...................... 122
E-5. Correlation Matrix for Parental Scores on the FNS and the FAM..... 123

LIST OF FIGURES

FIGURE PAGE

1. The Cognitive-Processes Framework.. 6
2. General Systems Theory.. 10
3. Bronfenbrenner's Theory of Human Ecology................................. 12
4. The Adjustment Phase... 19
5. The Adaptation Phase... 21
6. Modified T-Double ABCX Model: Hypothesized Pattern of Relationships.. 29
7. Summary of Significant Correlations ($p<.01$) between the Subscales of the FNS and the Dimensions of the Model.. 86

CHAPTER I

Overview

The Problem

Prior to the early 1980s, very few conceptual frameworks existed that could be used to systematically examine the adaptation and functioning in families of young children with special needs. (Bristol, 1987; Crnic, Friedrich, & Greenberg, 1983; McCubbin & Patterson, 1981). The majority of investigators used a stress-reaction model where the stressor event (i.e., the child with special needs) was compared in a direct and singular fashion with some definition of family impact/crisis (Crnic et al., 1983; Wikler, 1986). The role of potential mediating variables (e.g., the family's perception of stressful events, existing resources) was generally not considered (McCubbin & Patterson, 1981). Weaknesses in study design, construct definitions, and measurements were also common. The inclusion of a broad range of ages in the child sample, use of a unidimensional parent sample (i.e., the mother), and/or the lack of appropriate control groups were commonly cited criticisms of these earlier studies (Crnic et al., 1983; Dyson & Fewell, 1986).

As a result of these conceptual and methodological inadequacies, much of the literature prior to the 1980s generated results which were inconclusive, often contradictory, and of questionable validity and reliability (Crnic et al., 1983; Dyson & Fewell, 1986; McCubbin & Patterson, 1981). Firm conclusions regarding characteristics, resources, and beliefs that affect family adaptation to stress and crises could not be drawn from this data base (Bristol, 1987). The need for more adequate conceptual models to systematically examine the experience of stress and adaptation in families was clearly evident (Bristol, 1987; Crnic et al., 1983; McCubbin & Patterson, 1981). Recognition of this need led investigators to use a variety of theoretical frameworks, originating from the fields of psychology, sociology, and family studies, to examine the factors involved in the adaptation and functioning of families. One model in particular, the T-Double ABCX model, has demonstrated considerable promise as a conceptual framework to guide and integrate research in this field. However, as Wikler (1986) observed, further validation of the constructs and relationships within this model is required.

Statement of the Problem

The purpose of the present investigation was to test the validity of the T-Double ABCX model as well as evaluate its clinical utility as a framework for assessing family needs and planning family goals in early intervention. Measures related to the critical dimensions of the model and perceived family service needs were administered to 44 rural families of children with special needs. Data were analyzed in a series of correlational analyses to determine the degree of similarity between the observed relationships and those hypothesized in the model (i.e., validity), and between measures of the model and a measure of expressed service needs (i.e., clinical utility). A series of preliminary analyses were undertaken to evaluate (a) the homogeneity of the present sample [i.e., mother-father differences, location differences], (b) the representativeness of the present sample with respect to a larger population of families [i.e., differences from the normative population], and, (c) the similarity between the present sample and data sets collected in two urban studies from the same geographical region [i.e, McClelland, 1990; Reddon, 1989].

In the next chapter, three conceptual frameworks used predominantly to evaluate the various factors associated with family functioning and adaptation are reviewed. The essential components of each framework are discussed with a view towards highlighting their respective strengths and limitations. Emphasis is placed on demonstrating the utility of the T-Double ABCX model as a means for integrating and guiding research efforts. The clinical utility of the model as a framework for structuring family assessment and intervention programs is also discussed.

CHAPTER II

Review of the Literature

Introduction

Examination of the current literature regarding the adaptation and functioning in families of children with special needs confirms the use of a number of conceptual frameworks. In addition to the T-Double ABCX model, two other conceptual frameworks are dominant in the literature: the Cognitive-Processes framework and the Ecological-Systems framework. The Cognitive-Processes framework is concerned with cognitive appraisals and coping as important mediators of stress. Individuals are said to use "cognitive activities--evaluative perceptions, thoughts, and inferences--" to guide and interpret each adaptational interchange with the environment (Lazarus, Cohen, Folkman, Kanner, & Schaefer, 1980 p. 91). Proponents of the Ecological -Systems framework, are concerned with the child--family and family--community relationships and transactions. Therefore, primary emphasis is placed on the role of personal, familial, and community resources as mediators of stress.

Although both frameworks examine the effects of their variables of emphasis (i.e., cognitive processes, personal, familial, and community resources) quite extensively, a systematic evaluation of the potential interactions between these variables is not adequately addressed within either framework. The inadequate isolation of potential interaction effects within these frameworks is confounded further when the role of "social support", as defined in the two frameworks, is examined. In the Cognitive-Processes framework, social skills and social support are considered coping resources that the individual and/or family draws on to cope. Resources are thus construed as factors that precede and influence coping, which in turn mediates stress (Lazarus & Folkman, 1984). In the Ecological-Systems framework, social support and social skills are considered stress buffering or stress mediating variables. That is, they are viewed as resources that can directly increase resistance to stress, independent of other factors such as perceptions and coping. Which framework represents the role of social support most accurately, however, remains unclear.

The T-Double ABCX model of family adjustment and adaptation is unique in that it "... attempts to bridge various physical, psychological and sociological models of stress, coping and adaptation" (McCubbin & Patterson, 1981, p. 2). This model allows for the systematic evaluation of the variables of social support and appraisal as well as their interactions. The T-Double ABCX model also allows for the examination of these variables in relation to family coping and adaptation. Thus, the T-Double ABCX model controls for the limitations observed in the two other frameworks, while expanding on their strengths.

In the remaining sections of this chapter, an overview of each framework is provided, along with examples of supporting empirical evidence. Of note here is the amount of overlap existing among the constructs within the three frameworks, indicating that the frameworks may not be "independent". However, these frameworks are treated as independent in the current research, and therefore are presented as such in this review.

Predominant Conceptual Frameworks

The Cognitive-Processes Framework

The Cognitive-Processes framework is concerned primarily with the stress experienced by the individuals, rather than the stress experienced by the family as a unit. Based on the work of Lazarus & Folkman (1984), this framework views healthy adaptation to stressful encounters as mediated by two central processes: appraisals and coping. In the appraisal process, two evaluative issues are addressed (a) primary appraisals evaluating the significance of the encounter, and (b) secondary appraisals evaluating the coping options available. Both primary and secondary appraisals interact with each other to shape the degree of stress as well as the strength and content of the individual's emotional response. Primary appraisals of events include three levels of evaluation (a) events that hold no implications for the person's well-being [i.e., irrelevant], (b) events construed as positive or beneficial [i.e., benign/positive], and (c) events appraised as stressful [i.e., harm/loss, threat, or challenge]. The extent to which a particular event is appraised as stressful is determined by the confluence of a variety of personal and environmental factors. Lazarus and Folkman (1984) identified the factors related to one's commitments (i.e., expressions of what is held as important/meaningful) and beliefs (i.e., "preexisting notions about reality which serve as a perceptual lens" [p.63]) as having the most significant impact on the appraisal process.

Once an event is identified as stressful, secondary appraisals are required to mobilize the necessary coping efforts. These secondary appraisals determine what coping options are available to the individual, how effective any one option may be, as well as the probability of applying a given strategy successfully. The process of secondary appraisals leads directly to the onset of the coping processes. Here, primary concern is with the management of the environmental and emotional responses inherent in the encounter. The actual strategies used by an individual are determined by the types of coping resources available as well as the types of personal (e.g., internalized cultural values/beliefs) and environmental constraints inhibiting the use of those resources. Lazarus and Folkman (1984) identify six categories of resources that precede and influence the coping process: health and energy, positive beliefs, problem solving skills, social skills, social support, and material resources. Each of these categories can be viewed as properties of the person or properties of the environment.

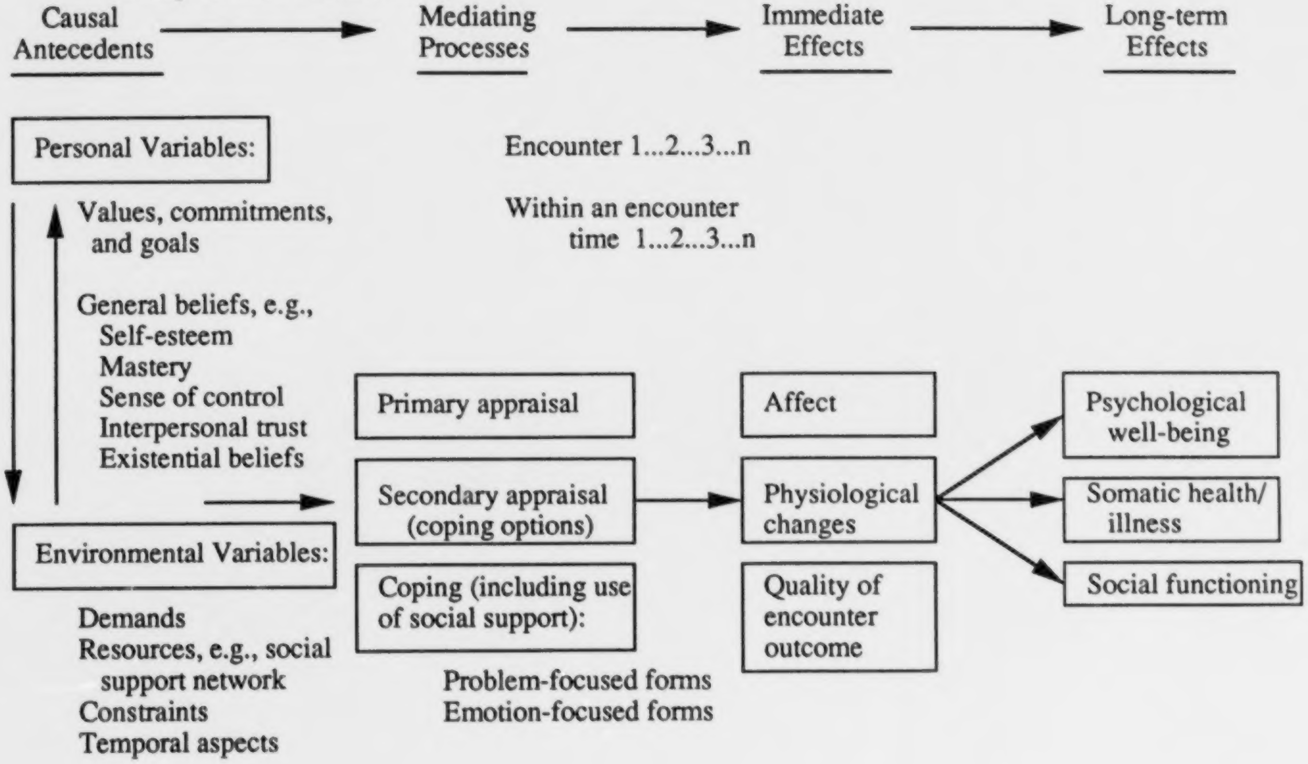
Figure 1 is an illustration of the Cognitive-Processes framework as it applies to three adaptational outcomes (i.e., psychological well-being, somatic health/illness, social functioning). As depicted by the diagram, the appraisal process is as an ongoing function of the interactions occurring between the person and the environment (i.e., person-environment relationship). The coping process effects the immediate outcome of the encounter as well as the long term adaptational outcomes. Lazarus and his colleagues (Lazarus, DeLongis, Folkman & Gruen, 1985) note that this framework is dynamic and recursive. Thus, appraisals and coping are always changing and continually influenced by the various adaptational outcomes.

Support for the Cognitive-Processes Framework

Empirical evidence supporting the mediating role of cognitive processes in psychological stress theory appears to be well documented (e.g., Lazarus et al., 1980; Lazarus & Folkman, 1984; Seyle, 1980). A number of investigators have examined the role of appraisals and coping in terms of family adaptation and functioning (e.g.,

Figure 1. The Cognitive Processes Framework

Adapted from Lazarus etal.(1985)


Causal Antecedents
Mediating Processes
Immediate Effects
Long-term Effects
Personal Variables:
Values, commitments, and goals
General beliefs, e.g.,
Self-esteem
Mastery
Sense of control
Interpersonal trust
Existential beliefs
Environmental Variables:
Demands
Resources, e.g., social support network
Constraints
Temporal aspects
Encounter 1...2...3...n
Within an encounter time 1...2...3...n
Primary appraisal
Secondary appraisal (coping options)
Coping (including use of social support):
Problem-focused forms
Emotion-focused forms
Affect
Physiological changes
Quality of encounter outcome
Psychological well-being
Somatic health/ illness
Social functioning

Note. Although not shown here, the model is recursive. Also, note the parallelism between short- and long-term effects.

Minnes et al., 1989; Reiss & Oliveri, 1980). Two groups of investigators, in particular, have used the Cognitive-Processes framework to explore the mediational influences of these factors in families of children with special needs.

Friedrich, Wilturner, and Cohen (1985) used the Cognitive-Processes framework with a sample of 140 mothers of children with intellectual handicaps to assess four coping resources (i.e., utilitarian, general/specific beliefs, health/energy/morale, social support) in relation to a measure of coping adequacy. Results demonstrated that child variables (i.e., severity of physical condition, behavioral problems) and coping resource variables significantly predicted coping adequacy. Although one coping resource (utilitarian) was not a significant contributor in the regression analyses, the remaining coping resources were found to explain an additional 36% ($\underline{R}$ = .60) of the variance over and above the child variables. For validational purposes, 104 of these mothers were re-tested ten months later. Results at the second testing supported the original analyses. Marital satisfaction (social support resource) was also found to be the single best predictor of change in the quality of maternal coping over time.

Frey, Greenberg, and Fewell (1989) examined the mediating influences of child characteristics and three coping resources (i.e., social networks, parental belief systems, coping styles) on parental stress, family adjustment and psychological distress in mother-father pairs. Results indicated that each of the predictor variables contributed significantly to parental outcomes: (a) child characteristics were predictive of stress for both parents and psychological distress for fathers; (b) social network resources predicted family adjustment for both parents and psychological distress in fathers; (c) a positive belief system and/or a noncritical social network were predictive of decreased psychological distress for mothers; (d) parental belief systems were identified as the single most powerful correlate of all parental outcomes; and (e) coping styles were predictive of family adjustment for fathers and psychological distress for mothers and fathers. The results from multiple regression analyses indicated that the framework used in this study accounted for 50% ($\underline{R}$ = .71) and 37% ($\underline{R}$ = .61) of the variance related to parental stress, 43% ($\underline{R}$ = .66) and 50% ($\underline{R}$ = .71) of the variance related to family adjustment and 30% (R = .51) and 50% (R = .71) of the variance related to psychological distress for mothers and fathers respectively.

In summary, these investigators provided evidence of the utility of the Cognitive-Processes framework as a means to examine adaptation and functioning in families of children with special needs. Emphasis in the studies reviewed was on the role of coping resources as mediators of family adaptation and functioning. In the next section, the Ecological-Systems framework is reviewed.

The Ecological-Systems Framework

Investigation of the concept of "man as part of his environment" began to gain currency in the early part of this century (Minuchin, 1974, p. 4). Consequently, a number of ecological and social-systems perspectives arose to evaluate the developmental and adaptational needs of children and their families (e.g., Bronfenbrenner, 1979). Proponents of this view concerned themselves with two primary relationships:

(1) The relationship between the child and his/her immediate environment (e.g., how the child and his/her family respond to one another).

(2) The relationship between the family unit and overall environment surrounding the family.

To examine these relationships, a number of researchers have used Family Systems and Social Network theories in conjunction with Bronfenbrenner's Theory of Human Ecology. Although these perspectives are used as separate theoretical orientations throughout the literature (e.g., Dunst, Leet & Trivette. 1988), they are very complementary in that they all ascribe to some, if not all, of the basic tenets of General Systems Theory. In the following section an introduction to General Systems theory is provided.

General Systems Theory. Goldenberg and Goldenberg (1980) defined a system and its properties as follows:

> ...a system is an entity with component parts or units that co-vary, with each unit constrained by or dependent on the state of the other units....In each case, there are components that have some common properties. These components interact with one another so that each influences and in turn is influenced by

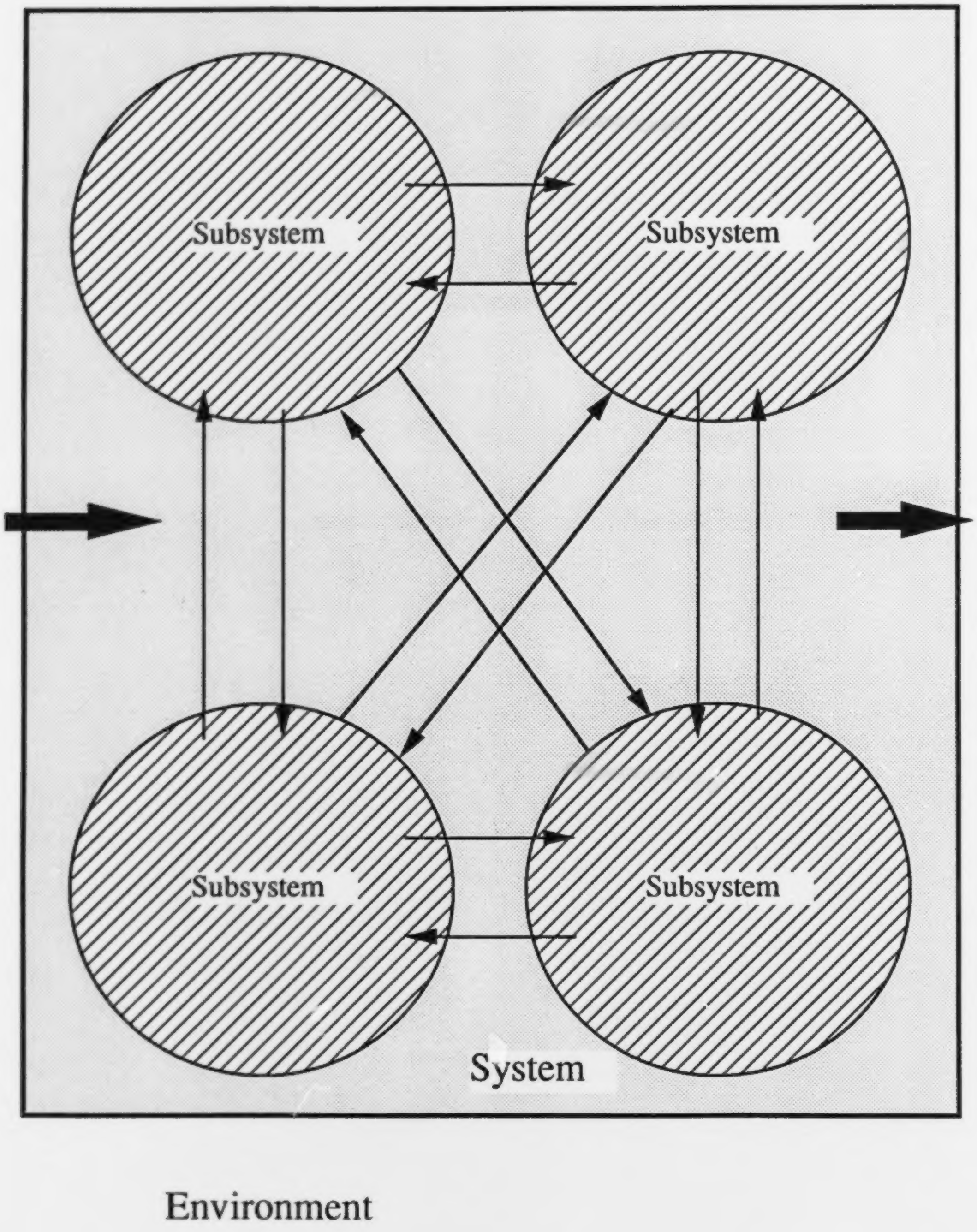
> other component parts, together producing a whole - a system - that is larger than the sum of its interdependent parts. (p. 29).

A basic tenet of General Systems theory is that the individual is part of a larger whole, rather than a "whole" in and of him or herself. Individuals engage in reciprocal transactions with their environment and behavior is explained in terms of its function within the larger system or context.

In his review of the theory, Schultz (1984) proposed that the world is divided into three objects: the whole (i.e., the system), the parts (i.e., the subsystems), and the rest of the world (i.e., the environment). The system is viewed as interacting with its environment as well as encompassing the subsystems and their mutual interactions. Systems that exchange information with their environments are termed "open systems", whereas those that do not are termed "closed systems". Figure 2 depicts the relationships among the system, subsystems, and environment. The solid arrows depict the interactions between the system and the environment (i.e., system-environment interface). The smaller interconnecting arrows demonstrate the interrelationships among the subsystems as well as the overall system-subsystem interface.

All systems are organized and structured to maintain some type of balance or "homeostasis" (Goldenberg & Goldenberg, 1980). The level of homeostasis within a system is regulated by an information loop that links the system and subsystems. Two types of feedback systems are used within this loop: (a) positive feedback [increases the deviation from a steady state]; and (b) negative feedback [corrects or adjusts the input so that the system may return to its previous steady state]. Over time, open systems in which this information loop operates reach a "steady state", or equilibrium, that is dependent only on the characteristics of the system itself (Schultz, 1984). This concept of "equifinality", has important implications for intervention with families, given that dysfunctional behavior from this viewpoint is characterized as being maintained by the current functioning of the family system. Thus, the target of intervention is shifted from the individual to the transactional patterns and interactions occurring within the family system. In the next three sections a review of the ecological perspective, family system theory, and social network theory is presented.

Figure 2. General Systems Theory
Adapted from Schultz (1984)

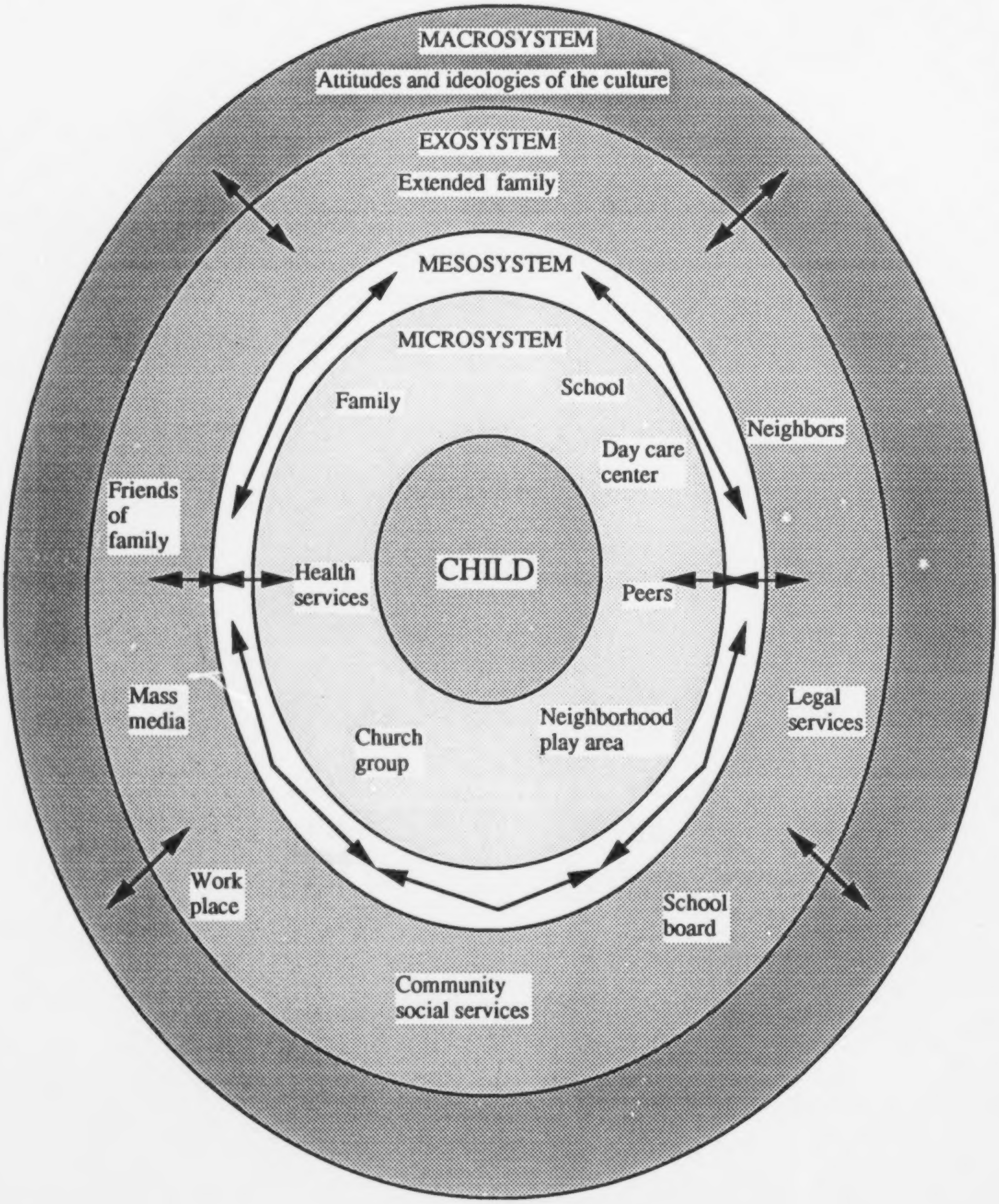

Subsystem
Subsystem
Subsystem
Subsystem
System
Environment

The Theory of Human Ecology. The framework proposed by Bronfenbrenner (1979) has been one of the most widely cited conceptualizations of the ecological approach to human development (e.g., Crnic et al., 1983; Dyson, 1987). Essentially, Bronfenbrenner conceptualizes individuals as existing within a series of four interdependent ecological units or structures where events and transactions occurring in one level reverberate and impact on the other levels. As depicted by Figure 3, the innermost level represents the microsystem. Here, concern is with the immediate environment in which the individual experiences his/her daily reality along with the reciprocal transactions and events occurring between the two. For a family, this immediate environment typically includes the work place, home, neighborhood, community groups, and so forth. The quality and quantity of relationships between these microsystems is referred to as the mesosystem, where emphasis is placed on the strength and diversity of the connections and relationships between microsystems. The third level, the exosystem, is concerned with the various formal and informal social settings that affect the individual, but do not necessarily contain them directly (e.g., Board of Directors of the work place, government agencies, media etc.). The macrosystem is the final level wherein lie the overriding cultural values and expectations, attitudes, laws, norms, and ideology that impinge on the individual (Berk, 1989).

Family Systems Theory. The ecological perspective postulates that the family is one of many microsystems that exist. In family systems theory, the family is viewed as a system consisting of a "complex interplay of interdependent parts that, together, form a network of reciprocal causal effects." (Berk, 1989, p. 603). The relationships between members are considered dynamic and bidirectional, where interactions between members both influence and are influenced by the quality of relationships between other members.

In his conceptualization of the family as a system that operates within specific social contexts, Minuchin (1974) identified three primary components of this perspective (a) family structure, (b) developmental transitions, and (c) family adaptation. All families have a structure which consists of an open sociocultural system in transformation. This structure refers to the invisible set of rules, expectations, and

Figure 3. Bronfenbrenners' Ecological Framework
(Berk, 1989)


MACROSYSTEM
Attitudes and ideologies of the culture
EXOSYSTEM
Extended family
MESOSYSTEM
MICROSYSTEM
Family
School
Neighbors
Day care center
Friends of family
Health services
CHILD
Peers
Mass media
Church group
Neighborhood play area
Legal services
Work place
School board
Community social services

functional demands that organize the ways in which family members interact. The rules adhered to within a family system pertain to authority, division of labor, and so forth (Goldenberg & Goldenberg, 1980). Family expectations include the myriad of explicit and implicit negotiations among family members concerning daily events. These two systems of constraint (i.e., family rules, family expectations) function as system parameters that the family draws on to maintain itself homeostatically. The functions of the family system are differentiated and implemented through its subsystems. Subsystems can include individual members, dyads (e.g., mother-father), or groups (e.g., siblings). Each family member belongs to several subsystems simultaneously and thus plays various roles, experiences various levels of authority, and learns different skills as he/she engages in different transactional patterns within these subsystems.

In addition to having a structure, all families undergo normal developmental transitions which require restructuring within the family system if successful adaptation and functioning are to occur. For example, in the development of the parental subsystem, the spousal subsystem is required to differentiate and perform the tasks of child-rearing without losing the mutual support that should characterize the spousal subsystem. The parents must learn to define a boundary that allows the child access to both parents while excluding him or her from the spousal functions.

Finally, families must also adapt to external demands associated with significant social institutions that have an impact on family members (Minuchin, 1974). Such demands may originate from: stressful contacts of one member with extrafamilial forces (e.g., family members may be required to accommodate to the work stresses affecting one individual); stressful contact of the family with extrafamilial forces (e.g., families may be required to accommodate to the stresses inherent in an economic recession); or idiosyncratic problems (e.g., families may be required to accommodate to the stressors and demands associated with a child/sibling having special needs). Responding to these demands requires a constant transformation of the interrelationships among members so that they can grow while the family strives to maintain its continuity as well as a healthy level of functioning.

Social Network Theory. In Social Network theory, emphasis is placed on the characteristics of the network (i.e., structural properties, component linkages) as well as the interactional properties of the network (i.e., functions served by the network, sources of support). According to Diamond and Jones (1983), the structural properties of the social network provide evidence of the accessibility/availability of opportunity for social interaction. These structural properties, however, do not provide evidence of the quality of relationships within the network. To determine the "quality of relationships" within the social network, consideration of the interactional properties (i.e., network functions, characteristics of the component linkages) is necessary.

Walker and his colleagues (Walker, MacBride, & Vachon, 1977) outline four structural characteristics that are relevant to the provision of social support: size, density, homogeneity of membership, and dispersion of membership. The size of a network refers to the number of people with whom the individual or family maintain some type of social contact, including those contacts that are renewable in case of need. The extent to which the members of an individual or family's social network know and contact one another independently of the individual or family is referred to as network density. Homogeneity of membership refers to the extent to which network members share social attributes such as demographic characteristics (e.g., age, sex, social class) and attitudinal and behavioral characteristics (e.g., social values, life style). Finally, the ease with which network members can make face to face contact refers to the dispersion of membership.

In their summary of the literature, Mitchell and Trickett (1980) summarized the functions of social networks as providing: (a) emotional support; (b) task-oriented assistance; (c) opportunities for communication of expectations, appraisals, and a shared world view; and (d) access to new and diverse information and social contacts. The amount and breadth of functions are a direct reflection of the quality of social support available to individuals or families.

A second way to examine the viability of an individual or family's network is to examine the quality of the linkages (relationships) within the social network. Mitchell and Trickett (1980) characterize the relationships within social networks along eight dimensions: intensity, durability, multidimensionality, directedness and reciprocity, relationship density, dispersion, frequency, and homogeneity. Intensity and durability refer to the strength and stability of the bond between two people and their willingness to forego other considerations in carrying out the obligations of their relationship. The number of functions served by a particular relationship provides an indication of multidimensionality. Directedness and reciprocity refer to the amount of mutual sharing between the individual and members of their particular network. Thus, the extent to which relationships provide an opportunity for the mutual provision of support, they reflect this characteristic. Similar to the structural characteristics identified by Walker and his colleagues (1977), the dispersion, frequency, and homogeneity of relationships within the network refer to the ease with which the individual can contact members of his or her network, the frequency of these contacts, and the extent that network members share common social attributes (e.g., religious affiliation, socioeconomic status). In the next section, evidence supporting the use of the Ecological-Systems framework is presented.

Support for the Ecological-Systems Framework

References to the utility of this framework, for both research and clinical purposes, can be found throughout the recent child and family development literature (e.g., Anglin, 1984; Cochran & Woolever, 1983; Diamond & Jones, 1983; Garbarino, 1982). Studies that used the Ecological-Systems framework to guide their investigations of stress and adaptation in families of children with special needs (e.g.,Dyson, 1987; Dyson and Fewell, 1986, Dunst et al., 1988; Dunst, Trivette, & Cross, 1986) are highlighted.

Concerned with the importance of social support , Dunst and his colleagues (Dunst, Trivette, & Cross, 1986) used Social Network theory as an adjunct to Bronfenbrenner's framework to generate predictions regarding the mediational influences of social support. The effects of social support on personal well-being, parental attitudes toward their child, family integrity, perceptions of child functioning, parent-child play opportunities, and child behavior and development were examined. Study results indicated that satisfaction with support as well as number and sources of support had main and/or interactive effects in all sets of outcome measures. Results demonstrated that both real and perceived behavioral characteristics of children were influenced by their parent's social support networks. Level of social support was found to have differential impacts at different ages of the child. The number and sources of support was significantly related to the number and type of games parents played with their children. Both physical and emotional health, and time demands placed on respondents were found to be positively related to social support. Parents with more supportive networks were less protective, and their children were more likely to make developmental progress. However, social support was found to have less mediational influences on family functioning compared to either personal well-being or parental attitudes. Given these findings, the authors suggest that social support may have more powerful influences on intrapersonal behavior than on family functioning.

Dyson and Fewell (1986) used Family Systems theory and Bronfenbrenner's theory to compare the experience of stress between families with and without children having handicapping conditions. Results indicated that parents of young children with handicaps experienced more stress than parents of nonhandicapped children of the same age. Stress came from four primary sources: objective child characteristics, perceived level of physical incapacitation, pessimism regarding the child and his/her condition, and severity of condition. The presence of a handicapping condition did not automatically pose more problems for families in terms of caretaking, availability of social support, parenting satisfaction, or the maintainence of family integrity and regular life.

Dyson (1987) used a similar conceptual framework to explore the relationships between parental stress, family functioning, and social support. Results indicated that the presence of a child with special needs in the home did not only affect parents but also affected the family unit as a whole. Consistent with the previous study (i.e., Dyson & Fewell, 1986), results indicated that while parents in this study reported increased levels of stress, ultimate parental outcomes were determined by available social supports and the general level of family functioning rather than the mere presence of a child with special needs.

Finally, Dunst and his colleagues (Dunst, Leet, & Trivette, 1988) examined the extent to which adequate personal and family resources affected parental well-being (emotional, physical) and commitment (time, energy, investment) to professionally prescribed child-level treatments. Results indicated that child characteristics were related to well-being but not to commitment factors and that adequacy of resources was related to well-being and commitment factors.

Thus, a number of investigators have demonstrated the importance of social support, and personal and family resource factors in successful family adaptation. In the next section, the T-Double ABCX model is reviewed. As discussed previously, this model encompasses the strengths within both the Cognitive-Processes framework and the Ecological-Systems framework, while controlling for the limitations inherent in these two frameworks.

The T-Double ABCX Model

The earliest conceptual foundation available to researchers for examining the variability in the family's adjustment to stress was Hill's (1958) ABCX model of family crisis. This model was followed by McCubbin and Patterson's Double ABCX model of adjustment and adaptation (1981a; 1983) which introduced the concept of postcrisis adaptation. The T-Double ABCX model was developed to expand upon these formulations as well as introduce the constructs of "family type" and "vulnerability" (McCubbin & McCubbin, 1991a). Essentially, the T-Double ABCX model views the family's experience of stress, crises, and adaptation as a dynamic and ongoing process. Emphasis is placed on the family's efforts to manage the demands it faces from stressors and strains (A and AA factors) with the resources (B, BB and BBB factors) and capabilities (PSC factor) it has for meeting those demands, mediated by the family's appraisal (CC and CCC factors) of the situation. The objective of these family efforts is to achieve a balance in family functioning (McCubbin & McCubbin, 1991b). This balance is reflected in the two phases of the model, the adjustment phase and the adaptation phase.

The Adjustment Phase.

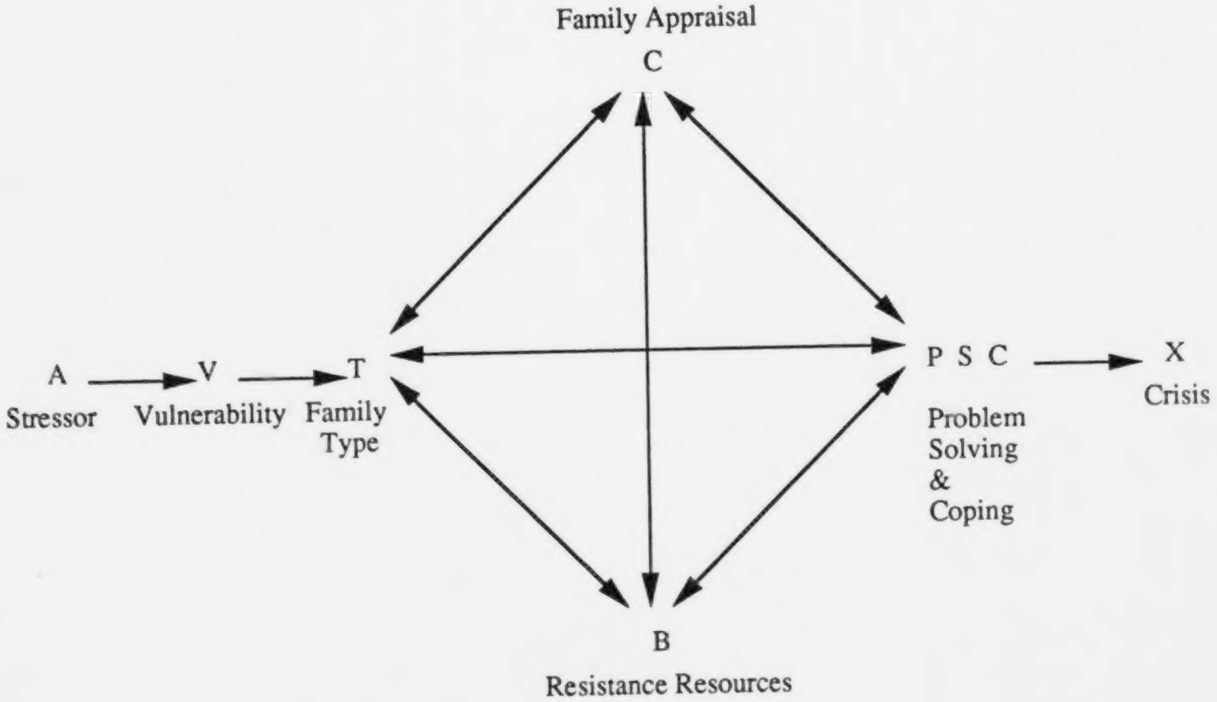
According to McCubbin & McCubbin, (1991a; 1991b) when a family encounters a stressor event or transition it typically moves through a "roller coaster" course of adjustment. This process of adjustment is characterized by the family's initial experience of a cluster of demands followed by their subsequent attempts to adjust to those demands with the least amount of disruption to their normal patterns of interactions. Emphasis is placed on those stressful life events and transitions that do not create major hardships for the family system given the family's strengths and capabilities (McCubbin & McCubbin, 1991a). Figure 4 depicts the relationships between the level of family adjustment achieved in response to the interaction of the stressor and remaining dimensions of the model.

In the Adjustment phase, the A-Factor refers to any life event (e.g., loss of a job) or transition (e.g., birth of a child) impacting on or within the family system which produces, or has the potential to produce, change. This change can include a change in goals, values, rules, or patterns of interacting. The degree to which the stressor threatens or disrupts the family's stability and/or places demands on the family's resources and capabilities determines the severity of the event or transition. Interacting with this factor is the family's level of vulnerability (i.e., interpersonal and organizational condition of the family system). At the onset of another stressor/transition, the pile up of demands already in existence contribute to the families ability to cope with the additional demands, thus determining the level of vulnerability. The basic attributes of the family that characterize and explain how the family system typically appraises, operates, and/or behaves (i.e., Family Typology) interact with the family's vulnerability, playing an important role in explaining families' responses to stress.

The capability of the family to prevent an event or transition from creating a crisis has been referred to as resistance resources (i.e., the B-Factor). Resistance resources (e.g., personal, familial, community) buffer the impact of the stressor and promote healthy family adjustment. These resources also interact with the family's appraisal of the stressor event (i.e., evaluation of the seriousness of the stressor, accompanying hardships, and impact on the family system) to promote healthy family adjustment. Inherent in this subjective definition (C-Factor) are the family's values and previous experience in coping with change and crisis. Family definitions can range from viewing situations as challenges to be overcome to viewing situations as beyond their control, all of which hold implications for healthy family adjustment.

Stressor events, transitions, and related hardships require management to reduce the demands inherent in the encounter. The PSC Factor (Family Problem-

Figure 4.
Outline of the Adjustment Phase of the T-Double ABCX Model


Family Appraisal
C
A
Stressor
V
Vulnerability
T
Family Type
P S C
Problem Solving & Coping
X
Crisis
B
Resistance Resources

Adapted from McCubbin & McCubbin (1991a)

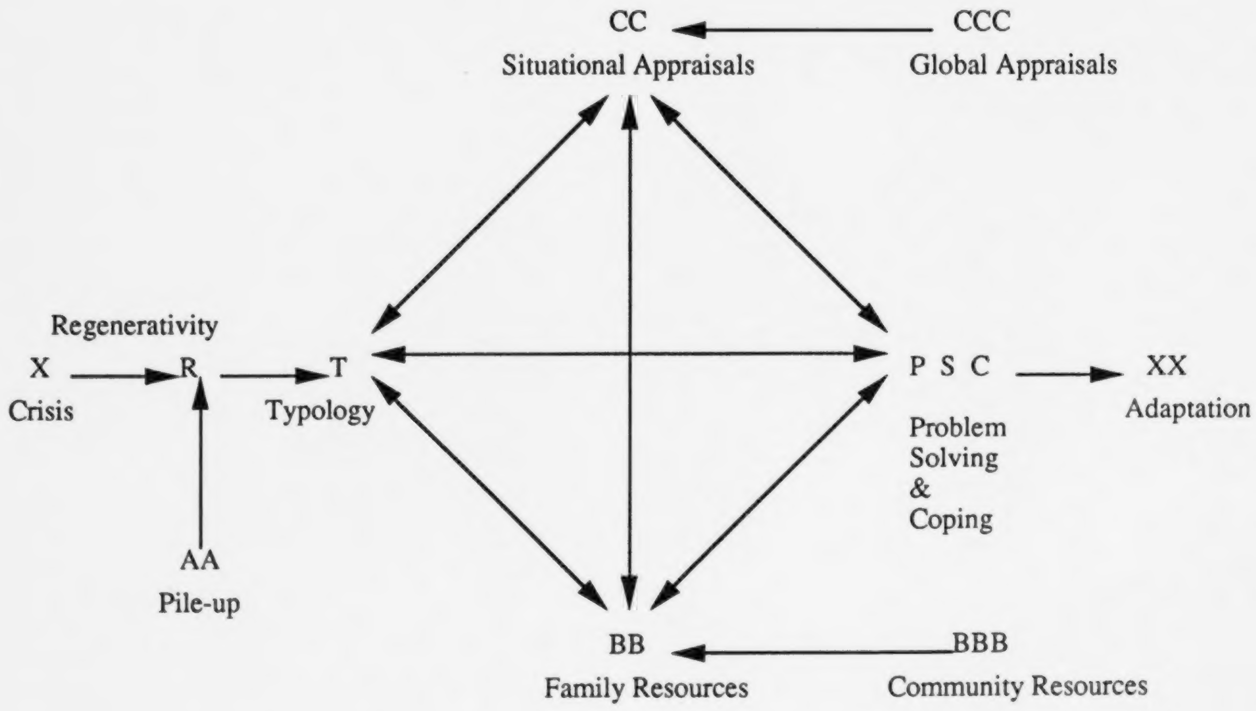
Solving and Coping) refers to the family's active management of demands inherent in the stressful encounter. Emphasis is placed on the family's ability to define the problem into manageable components and to use an effective problem-solving process. The family's use of appropriate coping skills is also emphasized and can include the use of strategies designed to (a) strengthen and/or maintain the emotional well-being and stability of the family unit/ members, (b) obtain and/or utilize required family and community resources, and (c) initiate resolution of family hardships created by the situation.

The combined interaction of these six factors determines the overall level of family adjustment achieved. Situations which do not create major hardships for the family, given their unique resources and circumstances, lead to a positive outcome involving only minor adjustments within the family system. Situations resulting in numerous and severe hardships, however, demand a greater degree of change within the family system and typically result in a state of maladjustment and crisis. It is this transition into a crisis situation that precedes the onset of the second phase of the model, the Adaptation phase.

The Adaptation Phase. In the Adaptation phase of the model, as indicated in Figure 5, the variables of emphasis have been redefined and expanded to include the following dimensions: (a) AA--additional life stressors and changes which may influence the family's ability to achieve adaptation; (b) R--family's level of regenerativity; (c) T--family's typology; (d) BB--critical psychological, family, and social support factors families call on to use in adaptation; (e) BBB--support received from friends and the community; (f) CC--family's appraisal of the situation; (g) CCC--family's world view and sense of coherence that determines the family's situational appraisal; (h) PSC--processes families engage in to achieve satisfactory adaptation; and (i) XX--adaptive or maladaptive outcomes of these family efforts. Thus, the process of family adaptation involves the "integration and interaction of another set of family demands, capabilities, resources, appraisals, and coping strategies" (McCubbin & McCubbin, 1991a, p.14).

In the T-Double ABCX model, family crises are viewed as evolving over time. Families are seldom dealing with a single stressor; rather, they are viewed as dealing

Figure 5.
Outline of the Adaptation Phase of the T-Double ABCX Model


CC
Situational Appraisals
CCC
Global Appraisals
Regenerativity
X
Crisis
R
T
Typology
AA
Pile-up
P S C
Problem
Solving
&
Coping
XX
Adaptation
BB
Family Resources
BBB
Community Resources

Adapted from McCubbin & McCubbin (1991a) with a pile-up of demands at any given time. This is particularly evident when families are dealing with a chronic stressor or are in the aftermath of a major stressor or role change. The AA Factor refers to the "pile-up" of demands that occur over time in relation to various crises situations. Five broad types of stressors and strains contribute to pile-ups (a) specific hardships associated with the crisis situation, (b) ongoing normative family transitions, (c) prior strains associated with unresolved stressors/transitions or ongoing roles of family members, (d) strains resulting from behaviors used by the family to cope with the crisis situation, and (e) strains resulting from intra-family and social ambiguity. The family's level of regenerativity (R-Factor) is determined by the current pile-up of demands and the family's typology (T-Factor). Once again, family typology refers to family types and attributes which also interact with the family's capabilities and appraisals.

In the adaptation phase, a capability is defined "as a potentiality the family has available to it for meeting its demands (McCubbin & McCubbin, 1991a, p 17). These "capabilities" can include intrafamilial resources or community resources. Intrafamilial resources (BB Factor) consist of two types (a) Personal Resources (e.g., sense of mastery, personality traits, self-esteem, physical and emotional health), and (b) Family System Resources (e.g., family cohesion, adaptability, communication, organization). Community resources available to the family (BBB factor) are evaluated in terms of both sources (e.g., friends, extended family members, co-workers, professionals) and type (e.g., altruistic support, esteem support, emotional support, network support, appraisal support).

When families face demands, these demands are interpreted, either consciously or unconsciously, within the context of prior experiences. These interpretations are referred to as "Situational Appraisals" and may be based on objective reality and/or subjective perceptions. Appraisals include many components of the demand (e.g., severity, amount of change implied, degree of controllability etc.) as well as an evaluation of the resources and capabilities available to meet the demand(s). Whenever the family perceives an imbalance between the level of demands facing them and the resources available, a demand-capability imbalance occurs resulting in tension and stress. Transcending situational appraisals are Global Appraisals, or Family Schema.

Global appraisals refer to the set of beliefs or assumptions held by family members in terms of themselves, their interrelationships, and their relationships to the larger community. Emphasis is placed on the family's sense of shared control, trust in others, and optimism coupled with their willingness to accept less than perfect solutions.

Another critical aspect of family adaptation is the process of acquiring and allocating resources for meeting the demands inherent in stressful encounters and normative transitions (i.e., the PSC-Factor). In the T-Double ABCX model, coping is defined as specific attempts to reduce or manage the demands facing the family system. The function of coping is to maintain and restore a balance between demands and resources. These coping behaviors can be grouped together as patterns or dimensions aimed at reducing specific demands and/or maintaining specific resources. Families who face excessive demands and have depleted resources are required to make changes within their existing family structure (e.g., modify established roles, rules, goals, and/or patterns of interactions) to restore and maintain functional stability. In the adaptation phase, Family Adaptation (XX Factor), is used to describe the outcome of these family efforts to achieve a new level of balance and functioning.

Support For the T-Double ABCX Model

A number of investigators have demonstrated the utility of this model, or its previous version, as a conceptual framework to integrate and guide research efforts. Wikler (1986) used McCubbin and Patterson's (1981a; 1983) Double ABCX Model to summarize and evaluate the stress literature pertaining to families of children with intellectual disabilities. In a more recent review, Gallagher and Bristol (1989) illustrated the validity of the Double ABCX model as well as highlighted the specific factors related to successful adaptation in families of children with special needs. In contrast to Wikler (1986), these authors presented a strong rationale for using this framework to guide research efforts and promote consistency across studies:

> (1) The model is an ecological model which recognizes the social and contextual nature of adaptation over time. This emphasis is consistent with the growing recognition of the changing developmental status of the child and the family.
>
> (2) The model provides for assessment of active coping as well as passive support.

(3) The model addresses the possibility that healthy adaptation rather than pathology may characterize the family's response to stress.

(5) The model has been empirically demonstrated to be applicable to adaptation in families of handicapped children.

Results from several investigations (e.g., Bristol, 1987; Lavee, McCubbin, & Olson,1987; McClelland, 1990; Reddon, 1989; Orr, Cameron & Day ,1991) also provide evidence supporting the model's validity. Bristol (1987) used the Double ABCX model (McCubbin & Patterson, 1983) to predict healthy family adaptation along the dimensions of marital adjustment, number of depressive symptoms, and in-home environment with families of children having autism or severe communication disorders. Results demonstrated that family adaptation was positively predicted by adequacy of social support and active coping patterns. Poorer adaptation was predicted by other family stresses, unwarranted maternal self-blame for the handicap, and a maternal definition of the handicap as a family catastrophe. Resources and beliefs were more predictive of family adaptation than severity of the child's handicapping condition. Overall, the total model accounted for 53% (R=.73, p<.01) of the variance in marital adjustment, 33% (R=.57, p<.05) of the variance in depressive symptoms, and 55% (R=.74, p<.001) of the variance in in-home quality of parenting.

Reddon (1989) and McClelland (1990) used an elaboration of this model, the T-Double ABCX Model (McCubbin & McCubbin, 1991a), to investigate the patterns of stress, coping, and adaptation in families of preschool children with moderate to severe mental, and sometimes, physical disabilities. In the Reddon study, results of correlational and multiple regression analyses indicated that pileups, resources and coping efforts were associated with the family's adaptive capacity. Each of these dimensions accounted for a significant amount of the variance in the measure of adaptive functioning. The total model accounted for 77% (R=.88) and 59% (R=.77) of the variance with respect to predicting family adaptation for mothers and fathers. McClelland (1990) reported similar patterns of stress, coping, and adaptation between his sample of families and the families in the Reddon study. Although the small sample sizes limited the generalizability of these studies, their findings were consistent with other investigators (e.g., Bristol, 1987) and thus contribute to the overall body of research supporting the validity of the T-Double ABCX model.

A final set of investigators used a different approach to test the validity of the Double ABCX model. Where other investigators used multiple regression analyses to validate the model, Lavee and his colleagues (1987) and Orr and his colleagues (1991) used a causal modelling approach. Results of the Lavee study (1987) confirmed the hypothesized patterns of relationships. Life events and transitions did not effect family well-being, but intensified intra-family strain. Family strain, in turn, negatively effected marital adjustment and perceived well-being. Family strain was also associated with a more optimistic appraisal of the situation. Both marital adjustment and appraisal were significantly related to well-being, counteracting the negative effects of pileups on well-being. In contrast, the results of the Orr study suggested that the the relationship between the A, B, C, and X variables could be viewed as a linear chain following an A to C to B to X path. This differs from the interactional perspective presented by McCubbin and Patterson (1983) where both perception and resource factors are postulated to affect stress equally. Comparisons of results between these two studies are difficult to make given the differences in variable definitions, measurements, sample size (e.g., 1,140 in the Lavee study as opposed to 86 in the Orr study), and nature of samples, (e.g., families of children without special needs vs. families of children with special needs).

Specific attempts to evaluate the clinical utility of the model for use with families in the field of early intervention have been made as well. Bailey & Simeonsson (1988b) used the T-Double ABCX model as part of a field-tested comprehensive intervention model for assessing family needs and planning family goals in early intervention. McClelland (1990) used the T-Double ABCX model as a framework to evaluate the effectiveness of a multiple treatment approach designed to bolster parental coping skills while reducing stress associated with the child and the parenting role. Although McClelland provided evidence supporting the dimensions of the model, limited support was indicated for the effectiveness of treatment approach used (i.e., naturalistic teaching strategies and stress management training). One possible explanation for this finding could be the fact that measures related to the family's perceptions of service needs were not directly obtained. Consequently, the needs perceived by the family as priorities for treatment and the needs targeted by the treatment approach could have been inconsistent with one another, resulting in a reduced motivation to participate in the intervention.

Synthesis of the Literature

During the early 1980s, a primary concern of investigators has been the lack of consistent and conclusive evidence regarding adaptation and functioning in families of children with special needs. The wide variance in findings was believed to be due to the lack of adequate conceptual frameworks and sound methodological procedures. As a result of this concern, researchers began to develop and utilize a variety of conceptual models, as well as improve their methodology, to systematically examine the many factors associated family functioning and adaptation.

Three conceptual frameworks, predominant in the current literature, were reviewed and discussed in terms of their ability to guide research efforts and promote consistency across studies in the field of family adaptation and functioning. The T-Double ABCX model was identified as a particularly promising framework for both integrating and guiding future research efforts. Taken as a whole, the evidence reviewed supported the validity of this framework for examining adaptation and functioning in families of children with special needs. Nevertheless, evidence substantiating the model continues to be required as researchers have only begun to test its theoretical validity. Evidence demonstrating the clinical utility of the model as a framework for assessing family needs and planning family goals in early intervention is limited; the potential for successful clinical application with families, however, has been recognized by many (e.g., Bristol, 1987; McCubbin & Thompson, 1991; Minnes, 1988).

CHAPTER III

Rationale and Research Questions

Rationale

The present study was undertaken to test the validity of the T-Double ABCX model as well as evaluate its clinical utility as a framework for assessing family needs and planning family goals in early intervention. Measures related to the dimensions of the model and a measure of family service needs were administered to 44 families of children with special needs. Correlation analyses were used to achieve these two objectives. A series of preliminary analyses were also conducted to evaluate (a) the homogeneity of the present sample [i.e., mother-father differences, location differences], (b) the representativeness of families in the current study relative to families in the norm group, and (c) the similarity between parents in the present study and parents in two recent investigations that used the T-Double ABCX model (McClelland, 1990; Reddon, 1989).

Comparisons with the data sets from the McClelland (1990) and Reddon (1989) studies were undertaken as their sample populations were similar to the present study (i.e., families of preschool children with special needs residing in north-central Alberta) and they used similar measures. There were three primary differences between the sample populations, however: (a) parents in the McClelland (1990) and Reddon (1989) studies resided in a large urban center as opposed to small rural communities; (b) participants in the two urban studies were restricted to families of children with moderate to severe handicapping conditions as opposed to families of children exhibiting a broad range of special needs; (c) sample sizes in the two urban studies were smaller than the present study (i.e., *N*=16 families in the Reddon study; *N* ≤16 families in the McClelland study, depending on the phase of his study; *N*=44 families in the present study). The rationale for the objectives of this study is presented in the following section. The specific research questions addressed in this study are summarized in the final section.

Validity of the T-Double ABCX Model

The T-Double ABCX Model postulates that there are two essential dimensions related to family adaptation and functioning: (a) pile-up of demands (stressors, strains); and (b) family capabilities (resources, coping strategies, appraisals). In the present study, these dimensions were examined within the context of the adaptation phase, given that by definition families of young children with special needs are assumed to be functioning within this phase.

McCubbin and McCubbin (1991a) state that the pile-up of demands and the family's capabilities to meet those demands are dynamic and interactional dimensions. Therefore, as depicted by Figure 6, the relationships between the pile-up of demands (AA), personal and family resources (BB), community resources (BBB), situational appraisals (CC), global appraisals (CCC), and problem solving and coping (PSC) factors were expected to be significant. Given that global appraisals (CCC) "transcend" situational appraisals (CC), it was expected that the relationships between the CCC factor and the remaining dimensions of the model (i.e., AA, BB/BBB, and PSC) would be somewhat weaker. Similarly, it was expected that the relationships between the community resources factor and the remaining dimensions of the model (i.e., AA, CC/CCC and PSC) would also be weaker.

McCubbin and McCubbin (1991a) outline six propositions concerning the relationship of these dimensions to family adaptation:

(1) In crisis situations, the pile up of stressors and strains is related to family adaptation, and this is a negative relationship.

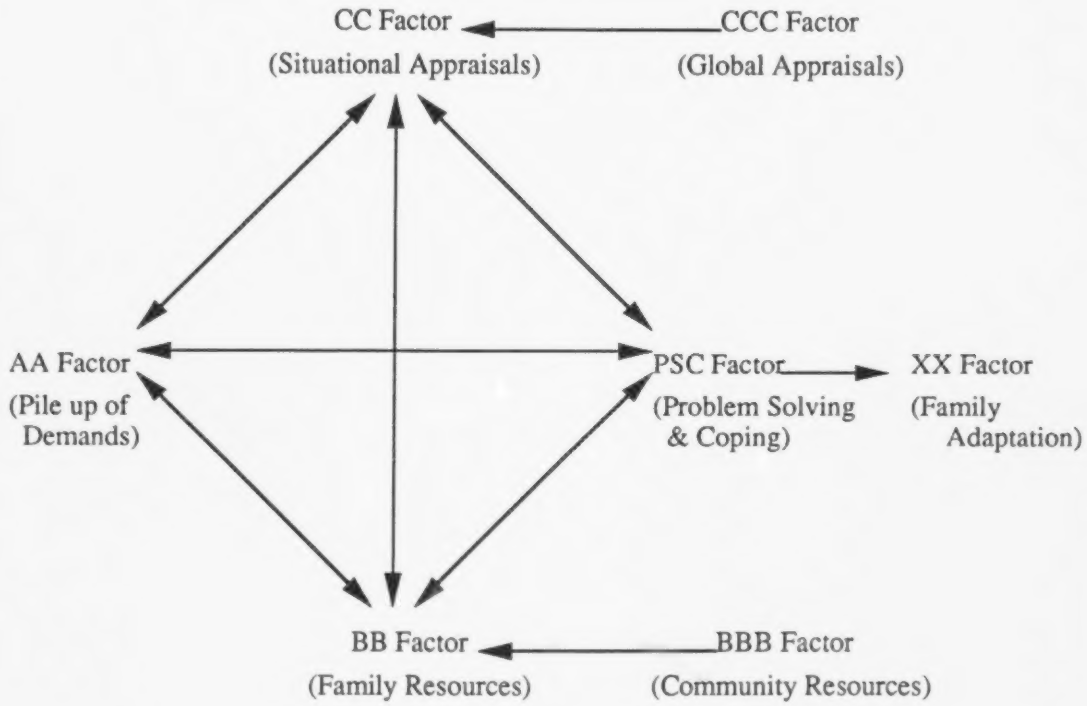
(2) In crisis situations, the family resources are related to family adaptation, and this is a positive relationship.

(3) In crisis situations, the breadth and depth of the family's social support are related to family adaptation, and these are positive relationships.

(4) In crisis situations, the family's positive appraisal of the situation is related to family adaptation, and this is a positive relationship.

(5) The family's sense of coherence, a world view of a crisis situation, is related to family adaptation, and this is a positive relationship.

Figure 6.
Modified T-Double ABCX Model: Hypothesized Pattern of Relationships


CC Factor
(Situational Appraisals)
CCC Factor
(Global Appraisals)
AA Factor
(Pile up of Demands)
PSC Factor
(Problem Solving & Coping)
XX Factor
(Family Adaptation)
BB Factor
(Family Resources)
BBB Factor
(Community Resources)

(6) The range and depth of the family's repertoire of coping strategies when employed to manage a crisis situation are related to the level of family adaptation, and these are positive relationships.

In order to test the validity of the model, the research questions pertaining to this objective were designed to evaluate the extent that the observed relationships exhibited a similar pattern of relationships as the relationships hypothesized by the T-Double ABCX model.

Clinical Utility of the T-Double ABCX Model

The second objective of this study was to examine the clinical utility of the T-Double ABCX Model as a means for structuring the assessment of family needs and subsequent planning of family goals in early intervention. The need to translate research findings into effective models for service delivery where family assessment and intervention strategies are based on family identified service needs, rather than service needs identified solely by professionals, has been well recognized (e.g., Bailey & Simeonsson, 1988a; 1988b; Dunst, Trivette & Deal, 1988; Orr et al., 1991). Although efforts to use the T-Double ABCX model as a framework for assessment and intervention have been undertaken, these studies have been few in number.

In order to examine the clinical utility of the model, research questions pertaining to this objective were designed to evaluate the degree of similarity between inferences drawn from the model concerning family needs and expressed needs identified by the family. Some level of consistency was expected, given that subscales pertaining to the measure of perceived service needs are similar in nature to measures of the model. For example, one subscale on the measure of perceived service needs pertains to family and support needs; measures representing the BB and BBB factors are specifically concerned with this area.

Research Questions

Corresponding to the objectives and rationale of the present study, the following research questions were outlined in three phases (a) Phase I--Preliminary Analyses, (b) Phase II--Validity of the T-Double ABCX Model, and (c) Phase III--Clinical Utility of the T-Double ABCX Model.

Phase I: Preliminary Analyses

1. To what extent do responses made by mothers and fathers in the present study differ significantly from the normative population on measures related to the critical dimensions of the model?

2. To what extent do responses made by mothers and fathers in the present study differ significantly from each other on measures related to the critical dimensions of the model?

3. To what extent do responses made by mothers and fathers in the present study differ significantly from mothers and fathers in the Reddon (1989) and McClelland (1990) studies on measures related to the critical dimensions of the model?

Phase II: Validity of the T-Double ABCX Model

1. To what extent do the observed relationships among the dimensions of the model (i.e., AA, BB, BBB, CC, CCC and PSC factors) indicate a similar pattern as postulated by the T-Double ABCX model?

2. To what extent do the observed relationships between the dimensions of the model and family adaptation indicate a similar pattern as postulated by the T-Double ABCX model?

Phase III: Clinical Utility of the T-Double ABCX Model

1. To what extent do responses made by mothers and fathers in the present study differ significantly from mothers and fathers in the Bailey et al., (in press) study on a measure of perceived service needs?

2. To what extent do responses made by mothers and fathers in the present study differ significantly from each other on a measure of perceived service needs?

3. Are the inferences drawn from the model regarding family needs consistent with the expressed needs identified by the family?

CHAPTER IV

Experimental Design and Methodology

In the present study, a nonexperimental correlational research design was used to evaluate the validity and clinical utility of the T-Double ABCX model. The critical dimensions of the Adaptation phase of the model were assessed by means of standardized self-report instruments and included the following dimensions (a) Pile-up of Family Demands [AA], (b) Family Strengths and Resources [BB], (c) Community Resources and Supports [BBB], (d) Situational Appraisals [CCC], (e) Global Appraisals [CCC], (f) Problem Solving and Coping [PSC], and (g) Family Adaptation [XX]. Data were examined in a series of analyses to meet the objectives of this study. In the remainder of this chapter, an outline of the participants and selection criteria, procedures for data collection, instruments employed, and methods of data analysis are presented.

Participants

Families considered eligible for inclusion in this study were recruited from an agency associated with the provision of preventative child and family health care services. Eligibility criteria for participation in the project were quite broad in order to obtain a cross-section of families having young children with special needs. Families had varying compositions (e.g., intact families, foster families, adoptive families, families headed by extended family members etc.). Families also had to reside in one of four rural communities located within north-central Alberta, and have at least one preschool child (birth to 5 1/2 years) with special needs. A broad definition of "special needs" was used, incorporating the following criteria:

1. Children exhibited a minimum delay of 6 months or greater in one aspect of early development (i.e., cognitive/motor, speech/language, emotional/behavioral, social, and/or special conditions with the potential to interfere with the child's development or growth in any of the four areas -- e.g., sensory impairments, medical/health problems).
2. Delays had been identified/diagnosed by (a) clinical judgement of professional nursing/health care staff, (b) parental report, (c) formal screening procedures, and/or (d) formal diagnostic procedures.

Procedures

The Director and Supervisor of a large rural agency associated with the provision of family and early childhood preventative health services were contacted and asked to participate in the study. The agency was asked to identify families who fit the criteria for inclusion and to notify those families of the research project by letter. This letter described the rationale for the project, time commitments, measures to protect the family's legal and ethical rights, and a general description of procedures and activities (See Appendix A). Letters were followed with a telephone call from agency staff as necessary. Verbal consent over the telephone was accepted in a number of cases, given the limited time constraints.

Upon receipt of signed or verbal consent, families were contacted by the author to arrange for a meeting. During this initial meeting, the rationale for the study, description of procedures and activities, and procedures to protect legal and ethical rights were restated to ensure participants' full understanding of the project. Final consent was secured in writing at this time (see Appendix A for protocol and consent forms). General demographic information (e.g., occupation of parents, education, number of siblings, family income etc.) and a brief diagnostic history of the child was obtained by a structured interview at this time as well. The questionnaires were then introduced in a specified order (see Table A-1 in Appendix A), although participants could have completed them in any order. Parents had the option of completing the questionnaires on the premises or in their homes. For those parents completing the questionnaire on the premise (n=18), the author was available to address any questions arising during or after the completion of the questionnaires. Participants completing the questionnaires at home (n=26) were provided with a telephone number in the event of follow-up questions or concerns. Three fathers and three mothers required direct assistance with reading and marking their responses on the questionnaires due to their limited reading skills. Prior to completing the questionnaires with these parents, care was taken to inform them of the nature and content of the questionnaires, the option of having another individual assist them, and their right to withdraw from the project if they felt uncomfortable. Final consent forms were paraphrased verbally.

Instruments

Similar to the approach used by others (e.g., Bristol, 1987; Lavee et al., 1987), a number of self-report rating scales were used to measure the dimensions of the model. This method was chosen for three reasons: (a) self-report measures can provide moderately valid and reliable indicators of constructs situated within the subjective realm of the individual [assuming adequate psychometric properties]; (b) self-report measures yield data that is amenable to statistical analyses; and (c) the method is expedient with large numbers of individuals. Consistent with other types of self-report measures, however, these instruments have a high level of reactivity (i.e., the subject can alter or distort the score received), and thus could be at risk for yielding scores that are confounded with certain response-set biases (e.g., social desirability, acquiescence, extremity, evasiveness, and carelessness, [Smith & Glass, 1987]).

The social desirability subscales incorporated in two of the instruments (Family Inventory of Resources for Management and the General Scale of the Family Assessment Measure III), were administered to control for potential threats to validity due to this response-set. The authors of the Life Orientation Test have also provided evidence of low correlation coefficients between the Marlowe Crown Social Desirability Scale and the LOT. Scoring reversal procedures and wording changes have also been incorporated in the various instruments by the test developers to control for potential threats due to the remaining response-sets. In the next section, a description of the instruments, their psychometric properties, and their use in the present study is provided.

Pile Up Dimension (AA-Factor)

In the present study, two measures were used to obtain an indication of the level of pileups: the Child Domain of the Parenting Stress Index (Abidin, 1986) and the Family Stressors Index (H. I. McCubbin, 1991).

The Parenting Stress Index (PSI). The PSI (101 items) is a screening and diagnostic instrument, designed to provide a "measure of the relative magnitude of stress in the parent-child system" (Abidin, 1986 p. 3). The scale was originally developed for use with the mother, although either parent may complete the scale. The

PSI yields individual subscale scores, domain scores, and a total stress score. Respondents rate each item on a five point Likert scale (1 = strongly agree, 5 = strongly disagree). Items are separated into three broad domains: Child Domain, Parent Domain, and an optional Life Stress Domain. The Child Domain (50 items) was used to provide an indication of the pile-up of child related demands. This domain includes six subscales which evaluate the adaptability, acceptability, demandingness, mood, distractibility/ hyperactivity of the child, as well as the extent that the child is perceived as reinforcing the parent. The Parent Domain was not used as it appears to assess factors other than pile-ups (e.g., parental functioning and adaptation, parental perceptions) which could result in a confounding effect in the subsequent analyses.

The PSI was based on an extensive review of the literature, clinical experience, a pilot test, and a variety of field tests (Abidin, 1986). Overall scale reliability is .95. The reliability coefficient for the Child Domain is .89. Evidence of test-retest reliabilities is presented by the author, with coefficients ranging from .96 for a one to three month period, and .65 for a one year interval. Normative data and guidelines for clinical interpretation of scores are based on a sample of 534 mothers from the United States. Limited normative data for fathers ($\underline{N}$=100) is provided, but Abidin (1986) suggests that fathers earn significantly lower mean scores ($\underline{M}$=92.9) than mothers ($\underline{M}$=98.4).

Family Stressors Index. The FSI (10 items) was used to provide an indication of the number of normative life events and changes experienced by the family in the past twelve months that could render them vulnerable to the impact of subsequent stressors or change. The FSI was selected as a measure of pileups associated with stressful life events over other measures (e.g., Life Stress Domain of the PSI, Family Inventory of Life Events--FILE [McCubbin, Patterson & Wilson, 1979; 1980]) for the following reasons (a) the FSI was specifically developed to assess the pileup dimension, (b) items on the FSI are less intrusive and more normative in nature, and (c) the FSI is short.

Items for the FSI were derived from the Family Inventory of Life Events (McCubbin et al., 1979; 1980). Respondents indicate whether the life events depicted by each item occurred to their family within the past 12 months. The FSI yields a "family score" for each item which are then summed and divided by 10. These derived scores can then be examined in the context of the family life cycle stage data provided by the authors. In terms of psychometric properties, a validity coefficient (i.e., correlation coefficient) with the original FILE of .60 is reported by McCubbin (1991a). Normative data is based on 1000 families from the United States involved in a survey of family strengths. Although additional information for the FSI is not available, the psychometric properties of the FILE appear reasonably strong. Overall scale reliability for the FILE is reported by McCubbin & Patterson (1991a) as .81, and subscale reliabilities range from .30 to .73. Evidence of construct, concurrent, and predictive validity for the FILE is also provided in the manual.

Personal and Family Resources (BB-Factor) and Community Supports (BBB-Factor)

Two instruments were used to assess the resources and community support dimensions. The Family Inventory of Resources for Management (FIRM: McCubbin & Comeau, 1991) was used to represent the BB factor and the Social Support Inventory (SSI: Cooke, Rossman, McCubbin & Patterson, 1982) was used to represent the BBB factor. There is a moderate degree of overlap between the types of resources reflected in both the FIRM and the SSI. However, McCubbin and McCubbin (1991a) consider these instruments independent with respect to measuring the two resource factors, although no correlational data between the two measures is provided. In the present study, the intercorrelations between the two measures were examined to rule out any substantial degree of intercollinearity.

Family Inventory of Resources for Management . The FIRM was developed "...to assess the family's repertoire of resources" (McCubbin & Comeau, 1991, p. 149). Selection of items for the FIRM was influenced by literature and theory in three major areas: personal resources, family system resources, and social supports (McCubbin & Comeau, 1991). The FIRM consists of 98 items where respondents rate each item in terms of how well the item describes their family situation (i.e., 0 = not at all; 3 = very well). Four major resources are tapped by the FIRM subscales (a) Family Strengths I: Esteem and Communication, (b) Family Strengths II: Mastery and Health, (c) Extended Family Social Support, and (d) Financial Well-Being. The Social Desirability subscale of the FIRM and Sources of Financial Resources were recently added to the instrument. The Sources of Financial Resources Subscale was not used in the present study as financial information was gathered in the initial interview.

In terms of psychometric properties, scale development was based on an extensive review of the literature as well as a factor analysis. Evidence of concurrent validity is based on significant correlations between the FIRM and the Family Environment Scales (FES: Moos, 1974). Internal reliability for the total scale is reported as .89 (Chronbach's Alpha). Individual subscale reliabilities are reported as follows: I = .85; II = .85; III = .62; IV = .85. Test-retest scores are not available. Normative data is based on a sample of 322 families of children with cerebral palsy or myelomeningocele from the United States.

The Social Support Inventory. According to Grochowski and McCubbin (1991), the SSI was designed to evaluate the social support available to parents as well as individuals in general. Five types of support, eleven sources of support, and the overall amount of support are examined in this instrument. Types of social support include (a) emotional, (b) esteem, (c) network, (d) appraisal, and (e) altruistic. Sources of support include (a) spouse or partner, (b) children, (c) other relatives, (d) close friends, (e) co-workers, (f) church/synagogue groups, (g) spiritual beliefs, (h) community or neighborhood groups, (i) professionals or service providers, (j) special groups, and (k) television, radio or newspapers. Respondents evaluate the amount of support received from these sources on a 3 point scale (1 = no; 2 = yes, 3 = yes, a lot). Scores are summed to provide an indication of overall support.

Grochowski and McCubbin (1991) report that the construct validity of the instrument was assessed and supported by Cooke, and colleagues (1982) through a systematic review of the literature, 22 ethnographic interviews and the completion of the SSI by the same 22 subjects. Test-retest reliabilities are reported as .81. Normative data is not available.

Situational Appraisals (CC-Factor) and Global Orientation (CCC)

Operationalization of these two constructs poses a number of difficulties given that they are situated within the subjective realm of each family member. The implied expectation that a single numerical value can adequately represent the myriad of factors which make up the family's perceptions is somewhat unrealistic (Wikler, 1986). Notwithstanding these limitations, two groups of researchers used the Passive Appraisals and Reframing subscales of The Family Crises Oriented Personal Evaluation Scales (FCOPES: McCubbin, Olson & Larsen, 1991) to represent the C factor in the adjustment phase of the McCubbin model (e.g., Minnes et al., 1989; Orr et al., 1991). Lavee and his colleagues (1987) however, used selected items of the original FCOPES to represent the CCC factor. This latter use appears to be the most consistent with the construct definitions presented by McCubbin and McCubbin (1991a; 1991b). Therefore, the Passive Appraisals and Reframing Subscales of the FCOPES were used to represent the CCC factor in the present study. The Life Orientation Test (LOT: Scheier & Carver, 1985) was used to represent the CC factor. This measure was selected as it provides information about the typical manner in which individuals appraise daily events and thus provides a basis from which inferences can be made regarding families' situational appraisals.

The Life Orientation Test (CC factor). The LOT was designed to "measure dispositional optimism, assessed in terms of generalized expectations of the occurrence of good outcomes in one's life" (Scheier & Carver, 1985, p. 239). These outcome expectancies are considered stable over time, and thus function as mediators of individual behavior in response to events. Development of this instrument was influenced by the lack of assessments which could measure these outcome expectancies without confounding them with other related variables such as morale, meaningfulness, well-being, and causal attributions (Scheier & Carver, 1985). The LOT consists of eight items in addition to four filler items that the authors included to disguise the underlying purpose of the test. Four of the items are keyed in a positive direction, and four are keyed in a negative direction. Respondents indicate the extent to which they agree or disagree with each of the items, using a four point Likert scale (0 = strongly disagree; 4 = strongly agree).

The construct validity of the LOT was supported by a factor analysis using a normative sample of 624 undergraduate men and women from the United States (Scheier & Carver, 1985). Evidence of convergent and discriminant validity is reported by the authors. Internal consistency (Chronbach's alpha) for the entire scale is .76 and test-retest reliability over a four week period (N=142) is .76.

The Family Crisis Oriented Personal Evaluation Scales (CCC factor). The FCOPES (30 items) was designed to "identify problem-solving and behavioral strategies utilized by families in difficult or problematic situations" (McCubbin, Olson, & Larsen, 1991, p. 203). The FCOPES was also designed to integrate aspects of family resources (e.g., extended family, friend support) and appraisals (e.g., Reframing, Passivity). Items on the FCOPES were generated from a review of the literature related to coping theory and research. The final version, from which the norms and psychometric properties are based, groups 30 items into five patterns of coping (McCubbin & McCubbin, 1991b). These patterns or subscales include (a) Acquiring Social Support, (b) Reframing, (c) Seeking Social Support, (d) Mobilizing the Family to Acquire and Accept Help, and (e) Passive Appraisals. Items are rated on a five point Likert scale indicating the extent to which respondents agree or disagree. Scores can be obtained for each subscale as well as for the total scale.

Scale development was based on a review of the literature, pilot tests, and factor analyses. The overall alpha reliability coefficient reported for the final instrument is .86. The alpha reliabilities reported for the Reframing and Passive Appraisals subscales are .82 and .63 respectively. Test-retest coefficients reported for a sample of 116 individuals over a four-week period for the Reframing and Passive Appraisals subscales are .61 and .75. Normative data is based on a sample of 2740 husbands, wives, and adolescents from the United States.

Family Problem-Solving and Coping Behaviors (PSC-Factor)

The Coping Health Inventory for Parents (CHIP) was used as a measure of the Problem Solving and Coping dimension in the present study. The CHIP was developed to assess parental perceptions of their ability to manage family life when they have a child with special needs (McCubbin, 1991b). Forty-five items are categorized into three subscales or coping patterns: (a) Coping Pattern I-- Family integration, cooperation, and definition of the situation; (b) Coping Pattern II-- Maintaining social support, self esteem, and psychological stability; and (c) Coping Pattern III--Understanding the health care situation through communication with other parents and consultation with health care professionals. Items are rated in terms of the perceived helpfulness of the particular strategy for the family (0 = not helpful; 3 = extremely helpful).

Evidence of construct validity was provided through factor analyses and discriminant analyses between high and low conflict families who had a child with cerebral palsy. Concurrent validity studies were conducted using the Family Environment Scale (Moos, 1974) and two indices of health status for chronically ill children. Wide spread usage of the CHIP is cited as further evidence of the instrument's validity. Internal reliability is reported as .79 for Subscales I and II, and .71 for subscale III. Test-retest reliability coefficients are not provided. Normative data is based on a sample of 308 families of chronically ill children from the United States.

Family Adaptive Functioning (XX-Factor)

The General Scale (50 items) of the Family Assessment Measure III (FAM) was used as a measure of the XX factor in the present study The FAM is a self-report measure that provides quantitative indices of family strengths and weaknesses (Skinner, Steinhauer, & Santa Barbara, 1983). This measure is based on a dynamic process framework (i.e., McMaster Model of Family Functioning) and includes three primary scales (a) General Scale, (b) Dyadic Relationship Scale, and (c) Self Rating Scale. In addition to an overall rating on each of these three primary scales, families are assessed along seven dimensions (i.e., clinical scales) related to family functioning: task accomplishment, role performance, communication, affective expression, involvement, control, and values and norms. The FAM General scale also includes Social Desirability and Defensiveness validity subscales. Respondents rate items on a four point Likert scale (a = strongly agree; d = strongly disagree).

Scores on the FAM profile are normalized such that each total scale and subscale has a mean of 50 with a standard deviation of 10. The majority of scores should fall between 40 and 60. Scores outside this range are likely to indicate either very healthy functioning (i.e., below 40) or disturbance in family functioning (i.e., above 60) relative to the normative sample (Skinner, Steinhauer & Santa-Barbara, 1984). The authors suggest that the more the Social Desirability and Defensiveness scales exceed 50, one should suspect the validity of scores on the other scales.

The FAM III was developed according to a construct validation paradigm. This strategy involved an "active interplay between specification of the theoretical model of family functioning and construction of an instrument to measure concepts of the model" (Skinner et al., 1983, p. 94). External validation procedures included: a) a comparison of the FAM scales with expert clinical ratings and behavioral observations [construct validity]; b) evaluation of the prognostic value of the FAM in terms of treatment outcomes [predictive validity]; c) examination of the correlation of the FAM III with other family assessment instruments [concurrent validity]; and d) determination of the perceived relevance of FAM III profiles to family therapists [clinical validity]. The reliability of the General Scale is .95 for adults. Subscale coefficients range from .60 to .87 for the General Scale. Normative data is based on a sample of 372 "normal" families that were tested at various Canadian health and social service settings.

Perceived Service Needs

In the present study, the Family Needs Survey (FNS) was used as a measure of perceived service needs. This instrument was selected as it is one of the few surveys that has been used in conjunction with the T-Double ABCX model and has been "field-tested" (Bailey & Simeonsson, 1988a; 1988b). The FNS was designed to identify perceived family service needs. Impetus for the development of this instrument came from the need for interventionists to augment subjective clinical judgement without using complex measures of family functioning requiring special training (Bailey & Simeonsson, 1988a). Item selection was based on a comprehensive review of the literature, extensive discussions with early interventionists, data collected from previous surveys, and the authors' personal experience working with families in a clinical setting.

The FNS consists of 35 items divided into seven categories (a) Information, (b) Family and Social Support, (c) Finances, (d) Explaining to Others, (e) Child Care, (f) Professional Support, and (g) Community Services. Respondents rate items on a three point scale (i.e., "no", "not sure", "yes") based on the question: "Would you like to discuss this topic with a staff person from our program?". In the present study, this scale was altered so that respondents rated items in terms of priority rather than service provision (i.e., 1 = not important, 2=not sure, and 3=definitely important). References to clinical service provision were also deleted from the instructions. These alterations were believed to have negligible effects on the reliability and/or validity of the test as the content and nature of items were unaltered and the wording of scale responses were consistent with the revised FNS.

The completion of factor analyses confirmed the statistical integrity of the item clusters and formed the basis for the revised survey (Bailey, Blasco & Simeonsson; in press). Further evidence of validity for the FNS was provided by Bailey and Blasco (1990) where parents were asked to evaluate the survey. In general, parents indicated that (a) the survey would help them tell their needs to professionals, (b) professionals would find the information useful, and (c) they were comfortable sharing the information requested. Test-retest reliability coefficients reported for the original version are limited to one small sample population (N=20) and were .67 for mothers and .81 for fathers over a six month period. Test-retest coefficients and normative data for the revised version are not available. The results from the Bailey et al., study (in press) involved a large number of participants (i.e., N=422 families receiving early intervention services in the United States) from which comparisons were made.

Data Analysis

Prior to analyses of the data, completed questionnaires were visually inspected to ensure that substantial amounts of data were not missing (i.e., > 2 items per subscale on more than two measures). Missing data of this type was handled by computing mean scores on the subscales. Parents (n=5) with data missing on portions of their questionnaires (i.e., 3 - 7 items missing from one subscale, or > 2 items missing from more than one subscale) were contacted by telephone and/or letter and asked to complete the missing portions. One father was unable to complete all of the questionnaires due to time constraints and was therefore excluded from those analyses requiring the missing data.

Three phases of data analyses were undertaken to achieve the objectives of this study. In the first phase, means and standard deviations for all questionnaire data were computed and the equality of means between mothers and fathers evaluated for statistical significance using independent t-tests of means. One-way Analysis of

Variance (ANOVA) and Scheffe's post hoc analyses were computed to evaluate the homogeneity of the group in terms of location. Separate analyses based on categories of diagnosis and/or severity levels were not undertaken as it was assumed that these conditions occur randomly.

Comparisons of the data with available normative data and the data from the McClelland (1990) and Reddon (1989) studies, where available, were also undertaken. Hotelling's T-squared multivariate test of means was used for comparisons of subscale scores between parents in the present study and the normative data. This test was used as it permits specification of outside population means and yields valid results when the variance and sample size of the populations being compared are substantially unequal. Comparisons of total scales with normative data were calculated manually using "quasi t-tests" (Glass & Hopkins, 1984) as entry of the total scores into the T-squared equation would yield spurious results. Quasi t-tests were also used to evaluate the equality of means between parents in the present study and parents in the Reddon (1989) and McClelland (1990) studies on total scale scores.

Appropriate application of the t-distribution to evaluate the equality of means requires that three assumptions be met concerning the populations to be compared (a) individual observations are independent, (b) scores within the two populations are normally distributed, and (c) the two population variances are equal (Glass & Hopkins, 1984). In the present study, the observations were treated as independent as it was assumed that parents completed the self report measures independently and with veridicality. However, it is conceivable that some degree of relationship between observations existed, given that parents were reporting on the same child. Moderate departures from the latter assumptions are generally considered to have negligible effects on the validity of both Type I and Type II error calculations when the tests are nondirectional and the sample sizes increase above 20 or 30 cases (Cohen, 1977).

One noteworthy exception occurs, however, when the variance of the populations are substantially unequal coupled with substantially unequal sample sizes. Evaluation of the homogeneity of variance for the statistical tests computed manually indicated significant heterogeneity, therefore quasi-t tests (Glass & Hopkins, 1984) were used to evaluate the equality of means rather than conventional t-tests. Estimations of the homogeneity of variances for the statistical tests computed with the SPSS-X program were not required as pooled and separate variances are calculated within the program and were used accordingly.

Power analyses (i.e., probability of not finding significant differences when they exist) were not conducted as the majority of observed differences between the sample means and external population means were minimal. In order to find statistical significance, therefore, extremely large sample sizes would have been required. Using extremely large samples would have increased the danger of finding differences that were statistically significant but of no practical value.

In the second phase of analysis, correlations and scatterplots were used to examine the patterns of relationships among questionnaire data representing the dimensions of the model. Intercorrelations within the test measures as well as the dimensions were examined. The equality of correlations among the dimensions of the model for mothers and fathers and husband-wife pairs were not undertaken as these analyses would reduce sample sizes for the group of husbands and wives to below 30. This reduced size would have increased the probability of capitalization on chance (i.e., finding significant differences by chance alone), given that a sample size of thirty or larger is required to obtain stable correlations (Borg & Gall, 1989). In the third phase of analysis, correlations and scatterplots were also used to examine the patterns of relationships between the critical dimensions of the model and the measure of perceived service needs. As in the second phase, scatterplots were used to determine any substantial degree of nonlinearity, and the intercorrelations within the measure of perceived service needs were examined.

Bivariate correlations depict the relationship between two variables with the influence of all the other variables included (Smith & Glass, 1987). Thus correlation coefficients provide an index of the association between pairs of variables without indicating how much of the shared variance is due to the influence of a third variable. In the present study, the scores of mothers and fathers were treated as independent, although in reality their scores are likely to be related to a certain extent given they are reporting on the same child, share the same social environment, and so forth. The inability of bivariate correlations to isolate confounding effects due to the potential nonindependence of scores for husband and wife pairs may have yielded inflated values. The large number of correlations computed in the analyses could also have increased the probability of committing Type I errors. Therefore, the significance levels for the statistical tests of correlations were set at alpha .01. Correlations significantly different from zero at the alpha .025 level were noted as possible trends.

Limitations in Correlational Research Designs

The goal of correlational research is to understand the patterns of relationships among the variables examined (Smith & Glass, 1987). According to Kerlinger (1986), this type of design is non-experimental and thus has certain properties (a) the inability to manipulate the independent variable, (b) the lack of power to randomize, and (c) the risk of making improper interpretations of results. All of these weaknesses can be subsumed under one limitation, the inability to make causal inferences from the results generated. In the present study, this limitation was not considered problematic given the nature of the study. However, correlational studies are more vulnerable to inadequate sampling and measurement and thus must be judged more severely on these criteria. Smith and Glass (1987 pp. 221-222) identify eight criteria for judging the merits of correlational studies, five of which are relevant to the present investigation.

1. Sample Selection. Has the sample been chosen to represent a defined population, or have the characteristics of the sample been described sufficiently so that a judgement of generalization can be made? In the present study, participants were volunteers recruited from a particular agency in a specified geographical region. Thus, in terms of the total population of families of children with special needs, generalization of results are limited in as much as the sample families differ from the larger population.

2. Sample Size and Variability. Is the sample large enough to not only yield stable bivariate correlations but to also offset problems of capitalization on chance? Is there sufficient variability in the sample? Borg and Gall (1989) report that to obtain stable results using correlational designs, a sample size of thirty or larger is required. The sample population in this study was 44 families (n=71). A cross-section of families were included in this study, therefore, it was believed that sufficient variability existed to avoid spurious results due to restriction in range.

3. Psychometric Properties of Measurements Utilized. Have the variables been measured with adequate reliability and validity? Instruments used in the present study demonstrated adequate psychometric properties. Thus, it was believed that the magnitude of correlations observed were not attenuated by inadequate reliability and/or validity.

4. Spurious Correlations. Have scatterplots been examined to rule out curvilinear relationships between variables? Pearson product-moment correlations will yield distorted results if the relationships found are curvilinear in nature. In the present study, scatterplots were used to determine any substantial degree of nonlinearity.

5. Choice of Correlational Statistics. Have the correct statistics been chosen? Bivariate correlations are used when data is reported in continuous form; that is data that form scales at the interval or approximately interval level of measurement. Although the instruments used in this study were ordinal, they were also continuous in form and thus could be, and have been, analyzed through the use of bivariate correlational statistics (e.g., Crocker & Algina, 1986).

CHAPTER V

Results

The results of the current investigation are presented in this chapter. Families are briefly described in terms of the demographic information obtained in the initial interview. Following this description is a presentation of results pertaining to the three phases of data analyses undertaken to achieve the objectives of the study.

Description of Participants

Forty-seven families residing in four rural communities located within north-central Alberta participated in the initial interview. Although all 47 agreed to participate, three families were dropped from the study as they failed to submit the completed self-report measures by the required deadline. In those families where two spouses were present in the home, all 39 mothers participated whereas only 26 (67%) fathers completed the questionnaires. Reasons for non-participation included lack of time due to work-related constraints (n=13) and direct refusal (n=3). In one family where the couple had recently separated, both parents completed the questionnaires, resulting in a final sample of 44 mothers and 27 fathers. One father did not complete all the questionnaires and was excluded from those analyses requiring the missing data.

In terms of family composition, 36 of the 44 families were intact with both natural parents living in the home. The primary caregivers in four of these families included persons other than the child(ren)'s biological parents (i. e., adoptive parents [n=1], foster parents [n=2], and grandparents [n=1]). The mother (grandmother in one situation) was living with her common-law spouse in 3 of the 44 families; the remaining families were single parent families headed by the child's natural mother.

Parents

The majority of parents in the present study ranged in age from 25 to 39 years. The mean age for mothers was 30.1 years (SD= 5.9) with a range of 23 to 53 years. The mean age reported by fathers was 32.8 years (SD=6.0) with fathers' ages ranging from 23 to 50 years. The majority of mothers reported having a minimum of high-school level education; 28 obtained a high-school diploma, 5 completed partial college, and 3 obtained university level degrees. A small number of mothers reported education levels below the high-school level; 5 completed partial high-school, 2 completed junior high-school and 1 completed less than seven years of education. The majority of fathers also completed a minimum of high-school level education; 22 fathers graduated from high-school and/or trade-school, 3 completed partial college training, 1 graduated from University and 1 graduated from Professional or University level programs. A small number of fathers reported education levels below the high-school level; 6 completed partial highschool, 5 completed junior high-school and 2 completed less than seven years of education. Comparisons of parental demographic data across locations is not described here; this information is provided in Table B-1, Appendix B.

In terms of occupation, 37 of the 44 mothers were full-time caregivers. Of the remaining seven, two were employed in positions categorized as "lesser professionals" (Hollingshead, 1975), four were employed in technical /semi-professional occupations, and one was employed in a semiskilled/small business occupation. All of the fathers were employed full-time. One father was employed in the category of "major professionals", four were employed in semi-professional/small business occupations, seven held technical/trades positions, two were employed in sales/smaller farm or business operations, and 19 were employed in skilled-level manual positions. The remaining six fathers were employed in semi-skilled, unskilled or menial labor positions. The gross family income for these families ranged from under $10,000 per annum to over $100,000 per annum. The majority of families (i.e., 70%) reported gross family incomes in the $20,000-$29,000 range and the $40,000-$49,000 range. The largest percentage of families (i.e., 22.7%) reported incomes between $30,000 and $39,000 per annum.

Children

The mean age of children in the present study was 44 months (SD=15.2). Children's ages ranged from 4.0 to 68.0 months with the majority of children's (70%) ages between 30.0 and 60.0 months. Although a formal diagnosis for 43.2% of the children was not available, diagnoses for the remaining children included a broad range of handicapping conditions. Classifications of severity level were available for 47% of the children, with 41% of the total group of children having conditions within the moderate to profound range. The majority of children (80%) were identified as having delays in the areas of speech and articulation, physical-motor development, language and communication development, or global development. The remaining 20% were reported as having medically-related problems requiring monitoring and/or surgery, sensory impairments, or specific delays in cognitive functioning. Almost half of the children were described as having difficulties/delays in a second area. Additional delays were reported primarily in the areas of language/communication, sensory impairments, and medical problems. A summary of the diagnoses, classifications, and area of delay are provided in Tables B-2 and B-3 (Appendix B).

In terms of diagnostic procedures, 41 of the 44 children were diagnosed through formal assessment procedures carried out by a qualified professional (e.g., speech pathologist), formal diagnostic procedures carried out by a qualified medical practitioner, or both. Three children were identified as delayed by clinical observation and/or the results of screening instruments used by nursing staff. The mean age at diagnosis was 20.7 months (SD=18.3), with 27.3% of the children diagnosed at birth, an additional 22.7% diagnosed by 24 months, 29.5% diagnosed by 36 months, and the remaining 20% diagnosed between 37 and 60 months of age.

The majority of families (67%) reported having one (n=12) or two (n=17) additional children in the home. Of the remaining families, six reported having three siblings in the home, five reported four siblings in the home, and four reported having no additional children in the home. Approximately one third (n=14) of the families reported having a second child in the home with special needs, six of which were currently at the preschool age level. Diagnoses for these six children included pervasive developmental disorder (n=1), global developmental delays (n=3), physical-motor delays (n=1), and medical problems requiring monitoring and/or surgery (n=1).

Phase I--Preliminary Analyses: Measures of the T-Double ABCX model

The results of the one-way ANOVA and Scheffe's test of ranges used to evaluate the homogeneity of the group across locations are described in this section. The descriptive statistics (i.e., mean, standard deviation , range of scores) and significance levels for scores between mothers and fathers on the self report measures are presented here as well. Results of the analyses comparing data in the present study with normative data, and data collected in the Reddon (1989) and McClelland (1990) studies (where available) are also presented.

Location Analyses

Results of the one-way ANOVA and Scheffe's test of ranges indicated that parental responses on the self-report measures were quite similar across the four locations, with a few exceptions (see Table B-4 in Appendix B). Families in Location #1 reported significantly higher resources overall than families in the other locations. Resources related to finances were significantly higher for families in Location #1 than for those in Locations #2 or #4. Significant differences were also observed between Locations #1 and #4 in terms of personal resources (i.e., mastery and health) and extended family support. These findings are consistent with the demographic information obtained in the initial interview, where families in Location #4 reported higher levels of education, occupations, and gross family income relative to the families in the other locations (see Table B-1 in Appendix B). Given the relatively few differences, parental scores were combined as one group, and separate analyses by location were not undertaken in the subsequent analyses.

Measures of Pileups: The AA Factor

The Parenting Stress Index Comparisons of descriptive statistics from the sample data with (a) normative means provided in the manual (Abidin, 1986), (b) mean scores from the study conducted by Reddon (1989), and (c) mean scores from the study conducted by McClelland (1990) are presented in Table 1. Statistical significance levels for the differences between mothers and fathers and the normative data are also included.

Comparisons with normative data. As shown in the table, the mean score on the Child Domain for the mothers and fathers were significantly higher than the normative means. The range of scores and standard deviation were also somewhat larger, indicating more variability in the present sample. According to Abidin (1986), scores falling at or above the 90th percentile (i.e., 122) are indicative of excessive stress and/or disruption within the parent-child system. The mean scores for parents in this study fell between the 75th and 80th percentile. This indicates elevated levels of stress;

Table 1. Comparative Analyses of Mean Scores on the Child Domain of the Parenting Stress Index.

		Present Study N=71				Norms N=534 ((m)) N=100 ((f))		Reddon N=32	McClelland N=29
Subdomain	m/f	Range	Mean	SD	p	Mean	p	Mean	Mean
Adaptability	(m)	15.0-49.0	28.52	7.27		24.5	p<.001	30.3	31.1
	(f)	12.0-40.0	28.24	7.50	.874	22.3	p<.001	29.0	32.8
Acceptability	(m)	8.0-28.0	15.39	4.41		12.5	p<.001	21.6	19.6
	(f)	7.0-23.0	14.89	4.60	.651	10.0	p<.001	19.9	21.4
Demandingness	(m)	11.0-41.0	22.38	7.13		18.1	p<.01	25.8	23.6
	(f)	9.0-41.0	21.07	7.03	.456	18.4	N. S.	24.4	23.9
Mood	(m)	5.0-18.0	11.11	3.62		9.6	p<.01	11.7	11.4
	(f)	5.0-18.0	10.63	2.88	.538	10.2	N. S.	11.9	11.5
Distractibility	(m)	14.0-39.0	26.52	6.56		24.4	p<.05	29.8	29.8
	(f)	12.0-43.0	24.89	7.50	.338	21.8	p<.05	27.4	28.8
Reinforcement	(m)	6.0-21.0	10.05	3.34		9.3	N. S.	12.2	13.8
	(f)	6.0-16.0	9.35	2.92	.375	10.2	N. S.	11.4	11.8
Child Domain	(m)	78.0-177.0	113.97	23.14		98.4	p<.001	131.2 N. S.	130.1*
	(f)	56.0-173.0	109.07	25.81	.410	92.9	p<.01	122.8	130.3**

Note: All correlations below p<.05 were omitted.
"m" = mothers; "f" = fathers
* p<.05; ** p<. .01

however, the magnitude of stress is not excessive. The scores of 15 mothers and 8 fathers, however, fell above the 90th percentile, suggesting that the magnitude of stress for those individuals was excessive and within the clinical range.

In terms of subdomains, the mean scores obtained by mothers and fathers fell between the 60th and 80th percentiles. Although below the clinical range, mean scores for mothers and fathers on the Acceptability, Adaptability and Distractibility subdomains were significantly higher than the normative group at the .05 level. Mean scores for mothers on the Demandingness and Mood subdomains were also significantly higher than the normative sample. Approximately one-third of the mothers reported levels of stress within the clinical range on all six subdomains (see Table 2), indicating these areas to be problematic. One-third of the fathers indicated stress within the clinical range on four of the six subdomains. (N.B., Clinical interpretations of scores were based on the normative data for mothers. If fathers' scores are significantly lower than mothers' in the larger population of "normal families" as Abidin (1986) suggests, it is conceivable that the cut-off scores [i.e., 90th percentile] would be lower than those used here).

Comparisons between Mothers and Fathers. Although mothers obtained higher mean scores than fathers, an independent t-test of means did not yield significant differences between scores reported for the total sample of mothers and fathers or between specific husband-wife pairs on the Child Domain of the PSI. Independent t-tests of means did not yield significant differences at the alpha .05 level between the scores of mothers and fathers on any of the subdomain scores. Significant differences between husband-wife pairs were observed on the Demandingness subdomain. Table C-1 (Appendix C) depicts the significance levels between husband-wife pairs on all eight self-report measures.

Comparisons with Reddon (1989) and McClelland (1990) . Independent t-tests of means yielded significant differences between mothers and fathers in the present study and mothers and fathers in the McClelland study on the Child Domain of the PSI. Parental scores in the present study were consistently lower than parental scores in either the Reddon or McClelland studies on all six subdomains. Table 2 presents the

Table 2. Percentile Ranks for Mothers and Fathers on the Child Domain of the PSI.

Scale	Mothers				Fathers			
	90 %	Present Study n=44	Reddon Study n=16	McClelland Study n=16	90 %	Present Study n=27	Reddon Study n=16	McClelland Study n=13
Adaptability	n=16 (36%)	80th	85th	90th	n=11 (41%)	80th	83rd	90-95th
Acceptability	n=19 (43%)	80th	99+	95-99th	n=10 (37%)	75th	95-99th	99+
Demandingness	n=16 (36%)	85th	95th	85-90th	n=9 (33%)	75th	90th	85-98th
Mood	n=17 (39%)	75th	80th	75th	n=8 (30%)	70th	80th	80th
Distractibility	n=15 (34%)	70th	85th	85th	n=5 (18.5%)	55th	75th	80th
Reinforcement	n=12 (27%)	75th	90th	90th	n=5 (19%)	55th	80th	85th
Child Domain	n=15 (34%)	75-80th	95th	95th	n=8 (30%)	70-75th	90th	95th

Note. "90%"=90th percentile (i.e., cut-off range).
Fathers percentiles are based on maternal norms.

percentile ranks for mothers and fathers in the present study and the two prior studies conducted by Reddon and McClelland.

For mothers, scores above the 90th percentile were demonstrated on the Acceptability, Demandingness, and Reinforcement subdomains in both the Reddon and McClelland studies and on the Adaptability subdomain in the McClelland study. In contrast, the mean scores for mothers in the present study did not exceed the 85th percentile on any of the six subdomains. For fathers, elevated scores at or above the 90th percentile were demonstrated on the Acceptability and Demandingness subdomains in both the Reddon and McClelland studies. Fathers in the McClelland study also demonstrated scores within the clinical range on the Adaptability subdomain. In the present study, percentile ranks for fathers on all six subdomains ranged from the 55th to 80th percentiles with the mean score on the Demandingness subscale being the only mean score above the 75th percentile.

The Family Stressors Index . Comparisons with the studies conducted by Reddon (1989) and McClelland (1990) were not made as neither study utilized the FSI.

Comparisons with normative data. The manual (McCubbin, 1991a) reports a normative mean score of 11.0 and a standard deviation of 8.0. The mean score for the combined group of parents in the present study was 12.43 (SD=8.70). An independent t-test of means did not yield significant differences between the mean scores for parents in the present study and the normative population. An examination of the range of scores (i.e., 0 - 36.5) indicated that only a small number of parents (i.e., 2 mothers and 2 fathers) attained scores two standard deviations above the normative mean.

Comparisons between Mothers and Fathers. Mothers in the present study obtained a mean score of 12.60 (SD=8.48). Fathers obtained a mean score of 12.15 (SD=9.20). Independent t test of means did not yield significant differences between the mean scores for mothers and fathers or specific husband-wife pairs on this measure.

Measures of Family Strengths, Resources and Capabilities: The BB and BBB Factors

The Family Inventory of Resources for Management (FIRM).

Comparisons with normative data. Although somewhat lower than the normative means, statistical analyses did not yield significant differences between the scores of parents in the present study and the normative sample on the FIRM (see Table 3). Of note, however, was the variability around the mean score on the Social Desirability subtest relative to the normative population (i.e., SD =3.32 versus SD=1.00). Seven fathers (26%) and nine mothers (20%) obtained scores outside the stated parameters for this subtest (i.e., normal range is 9.0 to 15.0). Four fathers and five mothers obtained scores below 9.0, and three fathers and four mothers obtained scores above 15.0.

Comparisons between Mothers and Fathers. Although lower, the mean score reported for mothers was within one standard deviation of the normative mean. However, for 30% of the mothers, the perceived level of available personal and family resources was below one normative standard deviation. In contrast, fathers in the present study obtained a mean score virtually identical to the normative mean. The higher FIRM score reported by fathers was due to their higher mean scores on the Family Strengths I and Extended Family Support subtests. Statistical tests did not yield significant differences between mothers and fathers or husband-wife pairs on the FIRM or any of its subtests.

Comparisons with Reddon (1989) and McClelland (1990). Parents in the present study reported lower levels of resources, overall, than the parents in the two prior studies. Independent t-tests of means yielded significant differences on the total FIRM score between parents in the present study and parents in the Reddon study only. Differences on subtests between parents in the present study and the two prior studies were marginal with one exception; the mean score reported by parents on the Family Strengths I subtest was more than one standard deviation below the Reddon mean. Consistent with the present study, data from the Reddon (SD=3.8) and McClelland (mothers SD=4.2, fathers SD=3.7).studies indicated a greater proportion of extreme scores on the social desirability subtest relative to the normative sample.

Table 3. Comparative Analysis of Parental Responses on the Family Inventory of Resources for Management.

		Present Study N=70				Norms N=322		Reddon N=32	McClelland N=15
Subscale	m/f	Range	Mean	SD	p	Mean	p	Mean	Mean
Esteem & Communication	(m)	12-44	31.83	7.54					34.6
	(f)	19-44	34.42	5.28	.127				36.6
	(T)	12-44	32.79	6.86		35.0	.248	38.4	35.5
Mastery & Health	(m)	18-54	36.33	9.12					36.6
	(f)	8-54	36.15	10.14	.942				34.0
	(T)	8-54	36.26	9.43		39.0	.363	40.1	35.2
Financial Well-being	(m)	12-45	29.17	8.79					34.0
	(f)	10-46	31.96	9.06	.209				41.0
	(T)	10-46	30.21	8.93		29.0	.943	34.5	37.3
Extended Family Support	(m)	2-12	8.50	2.79					8.2
	(f)	0-12	8.12	3.15					8.0
	(T)	0-12	8.36	2.91	.597	9.0	.669	9.7	8.12
Social Desirability	(m)	0-18	11.43	3.39					11.1
	(f)	5-18	11.23	3.25	.809				12.3
	(T)	0-18	11.36	3.32		12.0	.779	12.8	11.7
FIRM Total	(m)	60-153	105.82	22.22					113.0 N.S.
	(f)	37-142	110.65	22.77	.387				119.0 N.S.
	(T)	37-153	107.62	22.39		110.0	N. S.	122.8*	

Note. "m" = mothers; "f" = fathers; "T" = total
* $p<.001$

Social Support Inventory Table 4 presents the descriptive statistics of the sample data compared with the mean scores from the studies conducted by Reddon (1989) and McClelland (1990) as normative data were not available.

Comparisons between Mothers and Fathers. The SSI yields individual support scores and a total SSI score. The possible range of scores is from 5.0 to 15.0 on the individual support scores, and from 60.0 to 180.0 on the total scale score. Both mothers and fathers in the present study reported moderately high levels of social support (i.e., SSI scores above 110.0). Although slightly lower, the mean score for mothers on the SSI was not significantly different from fathers. Mothers and fathers also demonstrated similar variability around their respective mean scores. It should be emphasized, however, that five of the fathers (19%) and 14 of the mothers (32%) reported very low levels of support (i.e., total SSI scores below 100).

Both mothers and fathers reported high levels of support from their spouse, children, and extended family members. Within the social networks outside the family, both mothers and fathers reported high levels of support from their friends. Fathers reported significantly higher levels of support from co-workers than did mothers. Independent t-tests of means yielded significant differences between mothers and fathers or husband-wife pairs on this particular support score. There were no significant differences in scores between mothers and fathers or husband-wife pairs on any of the other support scores.

Comparisons with Reddon (1989) and McClelland (1990). Mothers and fathers in the present study reported higher levels of social support overall than parents in the Reddon or McClelland studies. Independent t-tests of means yielded significant differences between fathers in the present study and fathers in the McClelland and Reddon studies. Significant differences were not observed between mothers across the three studies. Perceptions of support from immediate and extended family networks were generally similar across the three studies. Perceptions of support from community networks differed, however. Mothers in the Reddon study reported significantly higher levels of support from friends (p=.005) and professionals (p=.008) than fathers. Mothers in the McClelland study also reported significantly more support from professionals (p=.004)

Table 4. Comparative Analysis of Parental Responses on the Social Support Inventory

		Present Study N=70				Reddon N=32	McClelland N=21
Scales	m/f	Range	Mean	SD	p	Mean	Mean
Spouse	(m)	5-15	13.46	2.06		13.3	11.5
	(f)	10-15	12.61	2.86	.191	13.3	12.3
Children	(m)	7-15	12.68	2.11		11.9	11.5
	(f)	9-15	13.31	1.91	.219	11.7	10.4
Relatives	(m)	5-15	12.05	2.51		11.9	10.5
	(f)	5-15	12.31	2.65	.680	11.0	9.4
Friends	(m)	5-15	11.57	2.21		12.3	11.4
	(f)	8-15	12.08	2.26	.360	10.0	9.6
Co-workers	(m)	5-15	7.25	3.12		7.8	6.6
	(f)	6-15	10.86	2.36	.000	10.0	8.3
Church or	(m)	5-15	7.39	3.11		7.6	6.0
Synagogue	(f)	5-15	7.62	3.41	.775	6.1	5.6
Spiritual Beliefs	(m)	5-15	8.18	3.37		8.7	9.6
	(f)	5-15	8.19	3.71	.990	8.7	8.9
Community Groups	(m)	5-15	7.89	2.88		6.5	6.1
	(f)	5-13	8.38	2.51	.482	6.8	6.4
Professionals	(m)	5-15	9.49	2.71		9.1	9.1
	(f)	5-14	8.50	8.52	.132	7.2	7.1
Special Groups	(m)	5-14	7.48	2.86		7.6	8.2
	(f)	5-13	7.35	2.74	.851	7.3	7.0
TV/Books	(m)	5-15	7.38	2.64		6.4	7.3
	(f)	5-13	7.31	2.80	.915	5.8	7.5
Other	(m)	5-9	5.11	.62		5.0	5.5
	(f)	5-9	5.27	.87	.430	5.1	5.0
Total	(m)	80-149	109.3	18.4		107.8	103.4
	(f)	84-157	114.6	18.31	.245	103.1*	97.6**

Note. "m" = mothers; "f" = fathers; "T" = total
* p<.02, ** p<.01
Redington

than fathers. In contrast, parents in the present study did not report significant differences in perceptions of support from friends or professionals.

Measures of Situational Appraisals and Global Appraisals: The CC and CCC Factors

The Life Orientation Test (LOT).

Comparisons with normative data. As depicted in Table 5, the mean score for mothers was significantly lower than the normative mean. The mean score obtained by fathers was virtually identical to the normative mean. These findings suggest that in facing daily problems, the general outcome expectancies for mothers is significantly less optimistic than for women in the norm group. It is important to note that the mean score attained by mothers was still within one standard deviation of the normative mean indicating moderate levels of optimism. Given that the normative data was based on a sample of undergraduate college women, the significant differences observed may be a function of differences between samples (e.g., increased demands facing mothers in the present study). For fathers, results indicate that they are about as likely as the men in the normative sample to conclude that the demands facing them can be overcome.

Comparisons between Mothers and Fathers. An independent t-test of means did not yield significant differences on the LOT total score between mothers and fathers or specific husband-wife pairs. Thus, although mothers report significantly lower levels of optimism than women in the norm group, their overall level of optimism was not significantly different from fathers.

The Family Crisis Oriented Personal Scales (FCOPES).

Comparisons with normative data. The standard deviation and mean scores reported for mothers and fathers on the Reframing subscale were virtually identical to the normative sample (see Table 5). On the Passive Appraisals subscale, the mean score observed for parents in the present sample was substantially higher than the normative mean, with statistical tests yielding significant differences level.

Comparisons between Mothers and Fathers. Independent t-tests of means did not yield significant differences on either the Reframing or Passive Appraisal subscale scores between mothers and fathers or husband-wife pairs.

Table 5. Comparative Analysis of Parental Responses on Measures of the Appraisals Dimension.

		Present Study				Norms	
Scale	m/f	Range	Mean	SD	p	Mean	p
LOT[a]	(m)	8-29	18.87	5.18		21.41	.002
	(f)	4-32	20.00	5.08	.379	21.03	N. S.
FCOPES[b]							
Reframing	(m)	15-39	30.96	5.05		30.42	.785
	(f)	21-40	31.19	4.88	.853	30.42	.743
Passive Appraisal	(m)	7-20	15.25	3.37		8.2	.000
	(f)	8-20	15.62	3.32	.710	8.5	.000

Note. "m"=mothers; "f"=fathers

[a] Study N=70; Norms N=654

[b] Study N=71; Norms N=2740

Measures of Problem Solving and Coping: The PSC Factor

The Coping Health Inventory For Parents (CHIP).

Comparisons with normative data. When compared with the normative data, two trends are apparent (see Table 6). First, mothers and fathers reported consistently higher levels of coping strategies on all three Coping Patterns than the normative group. Second, the lower standard deviations found in the present sample indicates that the parents in the present study were a more homogeneous group on this variable. Hotelling's T-squared test of means yielded significant differences between parents in the present sample and the normative sample on Coping Patterns II (social support, esteem, stability) and III (health care communication) for mothers, and on Coping Patterns I (integration, cooperation, and optimistic definition) and II for fathers.

In her review of studies utilizing the CHIP, M. A. McCubbin (1991) provides evidence of possible differences for families of children with multiple disabilities relative to the norm group. Lower mean scores on the third coping pattern and higher scores on the second coping pattern were observed in those families having children with multiple disabilities. Consistent with these observations, parents in the present sample reported significantly higher scores on the second coping pattern than the normative sample. Parents did not, however, demonstrate significantly lower scores on Coping Pattern III than the normative sample as reported by M. A. McCubbin (1991). Indeed, mothers in the present sample reported significantly higher scores than the mothers in the normative sample.

*Comparisons between Mothers and Fathers.*Independent t-tests of means yielded significant differences between mothers and fathers and specific husband-wife pairs on Coping Pattern III only. This suggests that mothers placed significantly greater emphasis on understanding the health care situation through contact with professionals than did fathers.

Comparisons with Reddon (1989) and McClelland (1990). Parents in the present study reported higher mean scores on all three Coping Patterns than parents in the two prior studies. This suggests that parents in the present study utilize a broader base of coping behaviors to manage the demands of parenting a child with special needs

Table 6. Comparative Analysis of Parental Responses on the Coping Health Inventory for Parents.

		Present Study N=70				Norms N=308		Reddon N=32		McClelland N=21	
Coping Pattern	m/f	Range	Mean	SD	p	Mean	p	Mean	p	Mean	p
I. Integration,	(m)	17-55	41.73	8.57		40.0	.640	35.5	.000	37.2	.015
Cooperation	(f)	23-54	40.60	7.50	.581	36.0	.051	33.3	.001	31.3	.000
&Optimism											
II. Support, Esteem,	(m)	8-47	32.08	9.00		28.0	.048	30.6	.769	29.1	.220
& Stability	(f)	16-47	33.25	8.74	.598	25.0	.002	26.1	.006	23.8	.000
III. Medical	(m)	9-23	17.05	3.96		15.0	.018	14.1	.000	16.2	.598
Communication	(f)	6-23	13.97	4.34	.003	12.0	.206	10.3	.005	13.5	.962
& Consultation											

Note. "m"=mothers; "f"=fathers

than parents in Reddon and McClelland studies. Hotelling's T-squared multivariate test of means yielded significant differences between mothers in the present study and mothers in the Reddon study on Coping Patterns I and III, and mothers in the McClelland study on Coping Pattern I. Significant differences between paternal scores were observed on Coping Patterns I and II in the McClelland study and on all three Coping Patterns in the Reddon study.

Measure of Family Adaptations (XX Factor)

The Family Assessment Measure III

Comparisons with normative data. As depicted Table 7, an independent t-test of means did not yield significant differences between parents in this study and the normative population on the General scale of the FAM III. A small number of families (i.e. under 20%) indicated significant difficulties in five of the seven areas of family functioning. For each of the clinical subscales there was at least 1 father and 5 mothers, and as many as 4 fathers and 8 mothers with scores above 60. Specific areas of concern reported by both mothers and fathers included Task Accomplishment, Role Performance, Affective Expression and Control. Fathers reported additional concerns with Family Communication and Affective Involvement.

Parents in the present study reported lower mean scores on both the Social Desirability and Defensiveness subscales, with statistical tests yielding significant differences on the Defensiveness subscale only. The authors (Skinner et al., 1984) suggest that Social Desirability and Defensiveness scores above 60 strongly indicate some distortion of the FAM profile (i.e., elevation of entire profile may be artificially depressed, shape of profile may be distorted). In addition, Social Desirability and Defensiveness scores below 40 do not guarantee the validity of the other scales, as there may be other distortions not being measured (i.e., projection). Skinner (Skinner et al., 1984) suggests that low Social Desirability scores, coupled with elevated scores on the clinical scales, may indicate anxiety, depression or an indirect request for help by the respondent.

Individual scores above 60 were attained by one father and two mothers on the Social Desirability subscale, and by one father and three mothers on the Defensiveness

Table 7. Comparative Analyses of Parental Responses on the Family Assessment Measure III.

			Present Study N=71			Norms N=372		Reddon N=32	McClelland N=13
Subscales	m/f	Range	Mean	SD	p	Mean	p	Mean	Mean
Task Accomplishment	(m)	28-83	50.05	10.31				48.63	-------
	(f)	33-68	50.22	9.54	.943			49.88	------
	(T)	28-83	50.11	9.95		50.0	1.000		
Role Performance	(m)	33-88	52.36	11.40				52.13	-------
	(f)	37-71	49.22	8.17				47.50.0	------
	(T)	33-88	51.17	10.34	.217	50.0	1.000		
Communication	(m)	31-73	51.25	8.51				49.25	-------
	(f)	40-83	54.37	9.24	.151			46.69	------
	(T)	31-83	52.44	8.56		50.0	.848		
Affective Expression	(m)	26-77	50.91	9.53				49.06	-------
	(f)	30-72	51.85	9.53	.700			47.81	------
	(T)	26-77	51.27	10.24		50.0	.999		
Affective Involvement	(m)	34-75	51.02	8.97				48.50.0	-------
	(f)	38-75	50.67	9.12	.872			47.94	------
	(T)	34-75	50.89	8.96		50.0	1.000		
Control	(m)	31-82	51.70	10.99				49.50.0	-------
	(f)	36-92	53.07	10.99	.612			47.25	------
	(T)	31-92	52.23	10.93		50.0	.975		

Table 7. Cont.

			Present Study			Norms		Reddon	McClelland
			N=71			N=372		N=32	N=13
Subscales	m/f/T	Range	Mean	SD	p	Mean	p	Mean	Mean
Values & Norms	(m)	34-78	52.32	9.61				44.81	-------
	(f)	38-95	50.67	10.51	.500	50.0		47.94	------
	(T)	34-95	51.69	9.92			.993		
Social Desirability	(m)	23-68	47.57	8.95				48.63	-------
	(f)	22-63	46.04	10.04				51.19	------
	(T)	22-68	46.99	9.34	.519	50.0	.682		
Defensiveness	(m)	12-69	44.68	10.55				42.81	-------
	(f)	9-65	42.63	10.11	.417			44.06	------
	(T)	9-69	43.90	10.36		50.0	.020		
FAM III Total	(m)	33-71	51.37	7.75				48.8 N. S.	48.7 N. S.
	(f)	43-79	51.44	7.52	.972			47.9 N. S.	48.0 N. S.
	(T)	33-79	51.40	7.61		50.0	N.S.		

Note. "m"=mothers; "f"=fathers

subscale. Five fathers and five mothers attained scores below 40 on the Social Desirability subscale, and 10 (37%) fathers and 14 (32%) mothers attained scores below 40 on the Defensiveness subscale. Of these individuals, eight obtained scores outside the stated parameters on both the Social Desirability and Defensiveness subscales, with seven also attaining extreme scores on the Social Desirability subtest of the FIRM. Two mothers had scores above 60 on both validity subscales of the FAM, one also attaining an extreme high score on the FIRM Social Desirability subtest. Three mothers and three fathers had scores below 40 on both validity subscales, all of whom attained extreme low scores on the FIRM Social Desirability subtest. Thus, for these eight individuals the validity of their overall profiles is questionable. (N.B., Two of the fathers with low validity scores on all three subtests had received direct assistance with reading the questionnaires and marking their answers).

Comparisons between Mothers and Fathers. An independent t-test of means did not yield significant differences between the scores for mothers and fathers or specific husband-wife pairs on the General scale, or any of the individual subscales.

Comparisons with Reddon (1989) and McClelland (1990). Parents in the present study demonstrated similar patterns of functioning and adaptation as the families in the Reddon and McClelland studies on the General Scale of the FAM III. Similar to these studies, mothers in the present study demonstrated a slightly higher degree of variability than fathers. Also similar to the Reddon study, there was a greater percentage of mothers scoring above 60 compared to fathers.

In terms of subscale comparisons, concerns indicated by mothers in the present study were Affective Expression and Control, with 18% of the mothers attaining scores above 60 on these two subscales. In contrast, mothers in the Reddon study were concerned with Role Performance; 25% having scores above 60 on this subscale. Fathers in the present study indicated concerns in five areas, where fathers in Reddon's study identified two areas. A similar proportion (18%, 19%) of fathers in both studies indicated concerns with Role Performance and Affective Involvement.

Phase II Validity of the T-Double ABCX Model

Results of the correlation analyses used to test of the validity of the model are presented in the following sections. The intercorrelation matrices are in Appendix D (Tables D-1 to D-5) and the correlation matrix for the dimensions of the model is provided in Table 8 (p. 69). As noted previously, the significance level for these analyses was set at alpha .01, with correlations significant at the .025 level noted as possible trends. Separate correlation analyses for mothers and fathers were not undertaken, as discussed previously.

Intercorrelation Trends.

Intercorrelations on the Child Domain of the PSI tended to be in the moderate range (i.e., .3 to .6), with 14 out of 21 correlations significant at p=.000 (see Table D-1). Nonsignificant correlations were observed between the Reinforcement subdomain and the Adaptability, Demandingness, Mood, and Distractibility subdomains.Subscale-scale correlations were high (i.e., .72 to .89, p=.000), with the exception of the Reinforcement subdomain. In terms of the pile-up dimension, nonsignificant correlations were observed between scores on the FSI and scores the Child Domain. This suggests that the experience of demands due to negative life events may be independent of the experience of demands due to child-related stressors.

As shown in Table D-2 (Appendix D), intercorrelations among the FIRM subscales were moderate (.3 to .6) and significant (p<.000 for 12 out of 15 correlations). Stronger intercorrelations were observed for the Family Strengths I, and II and the Financial Subscales (.49 to .6) than for the Extended Family Support subscale (.37 to .46). This could reflect the fewer number of items or type of resources (i.e., support from relatives) evaluated in this subscale. The majority of intercorrelations among the individual support scales and the total SSI score (see Table D-3) yielded coefficients that were in the moderate to high range (i.e., .3 to .72) and statistically significant. When low correlations were excluded (i.e., below .3), the pattern of intercorrelations appeared to cluster into two primary groups: informal support networks (i.e., immediate and extended family, friends, and co-workers) and formal support networks (e.g., church, spiritual beliefs, professionals etc.). However, moderate intercorrelations were observed among the friends, relatives, co-workers, and community groups support scales. Support from relatives was also intercorrelated with support from spiritual beliefs and professional groups. These latter correlations suggest that the "clusters" were not completely independent. Although slightly lower than expected, the positive correlation observed between the SSI and FIRM total score was significant. The correlations between five of the SSI subscales and the FIRM score were moderate (.3 to .51) and significant (see Table D-4). Support from relatives, spouse, and community groups were significantly related to the majority of FIRM subscales.

For the appraisals dimension, low positive correlations (i.e., $r < .3$, $p < .025$) were observed between the two subscales of the FCOPES (i.e., Reframing and Passive Appraisals subscales) and between the LOT and the Passive Appraisals subscale. A nonsignificant relationship was observed between the LOT and the Reframing subscale. In terms of Problem-Solving and Coping, the intercorrelations among the three Coping Patterns of the CHIP were moderate, positive and significant . Correlation coefficients for Coping Patterns I and II, and I and III were somewhat stronger than the coefficient for Coping Patterns II and III (i.e., $r = .62 - .63$ versus $r = .38$). This was expected given the different strategies assessed by the three dimensions. Items comprising the first two coping patterns relate to behaviors aimed at maintaining personal and family system resources and a positive appraisal of the situation. Items in the third pattern, however, reflect coping behaviors aimed directly at the medical/health care problem (i.e., developing more knowledge and understanding of the health care situation, mastering prescribed home-care treatments and medical regimens). Finally, as shown in Table D-5, the intercorrelations among the clinical and validity scales of the FAM III were moderate, positive, and statistically significant ($p=.000$ for 40 out of 45 correlations). The relationships between the clinical scales and the two validity scales were negative. Moderate, negative correlations were observed between the validity scales and General Scale; correlations between the clinical scales and General Scale were positive and ranged from .71 to .83.

In summary, the majority of intercorrelations within the self report measures were moderate and significant. Subscale-scale correlations were appropriately high, ranging from .71 to .89 (N.B., p=.000 for the majority of coefficients). These findings indicate that the subscales within each instrument were reasonably independent yet demonstrated adequate consistency in terms of the overall constructs measured in the various instruments. One notable exception was the Reinforcement subscale in the Child Domain of the PSI, where nonsignificant correlations were observed between this subdomain and four of the subdomains. A low correlation was also observed between this subdomain and the Child Domain total score.

Correlation Analyses

According to McCubbin and McCubbin (1991a), the relationships among the dimensions of the model are such that the pile-up of demands, personal and family resources, community resources, situational appraisals, global appraisals, and problem solving and coping dimensions are all significantly correlated to each other. Table 8 presents the correlation matrix for parental scores on the self-report measures depicting these dimensions.

Pile-up of Demands. Contrary to the hypothesized relationships, significant correlations between scores on the FSI and the remaining measures of the model were not observed.The correlations between measures of the model and the PSI were somewhat stronger and more consistent with the hypothesized relationships, than those observed for the FSI. Moderate, negative correlations were observed between parental scores on the Child Domain of the PSI and the FIRM, the LOT, and the Passive Appraisals subscale of the FCOPES. A lower, negative correlation was also observed between scores on the Child Domain and the SSI. The correlation between parental scores on the Reframing subscale and Child Domain was not significant. Finally, a moderate, positive correlation was observed on the Child Domain of the PSI and the General scale of the FAM. This was expected given that higher scores on the FAM are indicative of poorer family functioning and maladaptation whereas, lower scores are indicative of family strength and adaptation.

Resources and Community Supports. The observed correlations among the measures representing the model and the FIRM tended to be consistent with the hypothesized relationships and were in the moderate range (i.e., .3 to .6). As discussed previously, scores on the FIRM were negatively correlated with scores on the Child

Table 8 Correlation Matrix for Parental Scores on the Critical Dimensions of the Model

	PSI	FSI	FIRM	SSI	LOT	FCOPE I	FCOPE II	CHIP I	CHIP II	CHIP III	FAM III
PSI	-----	-----	-.51***	-.29**	-.31**	-----	-.36***	-----	-----	-----	.41***
FSI	-----	-----	-----	-----	-----	.20	-.20	.23	.23	-----	-----
FIRM	-----	-----	------	.39***	.62***	.29**	.48***	.39***	.24*	-----	-.59***
SSI	-----	-----	------	------	.43***	-----	.24*	.43***	.41***	.28**	-----
LOT	-----	-----	------	------	------	-----	.25*	.30 **	.25 **	-----	-.51***
FCOPE I	-----	-----	------	------	------	------	.25*	.30**	-----	-----	-.27**
FCOPE II	-----	-----	------	------	------	------	------	.31**	-----	.24*	-.24*
CHIP I	-----	-----	------	------	------	------	------	------	.63***	.62***	-.38**
CHIP II	-----	-----	------	------	------	------	------	------	------	.38***	-----
CHIP III	-----	-----	------	------	------	------	------	------	------	------	-----
FAM III	-----	-----	------	------	------	------	------	------	------	------	------

Note. All correlations below p<.05 were omitted.
FCOPE I refers to Reframing Subscale; FCOPE II refers to Passive Reframing Subscale.
*p<.025, **p<.01, ***p<.001

Domain of the PSI and positively correlated with scores on the SSI. On the remaining dimensions, scores on the FIRM were moderately and positively correlated with scores on the LOT, the Passive Appraisals subscale of the FCOPES and Coping Pattern I of the CHIP. Lower correlations were observed between the FIRM and the Reframing subscale of the FCOPES and between the FIRM and Coping Pattern II of the CHIP (N.B., p=.023). A moderate, negative correlation was observed between scores on the FIRM and the total General Scale of the FAM indicating that higher levels of personal and family resources were related to better levels of family adaptation and functioning.

In terms of the community resources, the observed relationships between measures of the model and the SSI tended to be in the low to moderate range (.24 to .43). In addition to the relationships already described, scores on the SSI were moderately correlated and positively with the LOT and Coping Patterns I and II of the CHIP. Lower correlations were observed between the SSI and Coping pattern III of the CHIP and between the SSI and the Reframing subscale of the FCOPES (N.B. p=.024). The nonsignificant correlation between the SSI total score and the General Scale of the FAM was not consistent with the relationships hypothesized by the model. This suggests that the level of community resources available to families in the present study was unrelated to their level of family functioning and adaptation.

Situational and Global Appraisals . In addition to the results discussed previously, a significant correlation was observed between scores on the LOT and scores on Coping Pattern I of the CHIP. Lower correlations (p< .025) were observed between the LOT and the Passive Appraisals subscale and between he LOT and Coping Pattern II of the CHIP. A moderate negative correlation was also observed between the LOT and the General Scale of the FAM. Consistent with the model, therefore, positive situational appraisals were associated with: higher levels of resources, increased coping efforts aimed at maintaining personal and family system resources, and better family adaptation. The observed patterns of relationships between the Reframing subscale and the dimensions of the model tended to be low (i.e., below .3) and nonsignificant. Correlations not yet discussed include the positive relationship observed between the Reframing subscale and Coping Pattern I of the CHIP, and the negative relationship observed between the Reframing subscale and the General Scale of the FAM..

The pattern of relationships between the measures of the model and the second measure of global appraisals (i.e., the Passive Appraisals subscale) were also in the low to moderate range (i.e., .20 to .48). Scores on the Passive Appraisals subscale were negatively related to scores on the Child Domain of the PSI and positively related to scores on the FIRM and Coping Pattern I of the CHIP. Lower correlations (N.B., $p<.025$) were observed between scores on the Passive Appraisals subscale and scores on the LOT, the SSI, and Coping Pattern III of the CHIP. A lower, negative correlation ($p<.025$) was also observed between scores on the Passive Appraisals subscale and the General Scale of the FAM.

Problem-Solving and Coping. The relationships between measures of the model and Coping Patterns I and II were in the low to moderate range; correlations between Coping Pattern III and the remaining dimensions of the model were generally nonsignificant. Higher scores on Coping Pattern I were significantly related to higher scores on the the FIRM, the SSI, the LOT, the Reframing subscale, and the Passive Appraisal subscale. A moderate negative correlation between Coping Pattern I and the General scale of the FAM was also observed. Significant correlations were observed between Coping Pattern II and the FIRM, and between Coping Pattern III and the SSI.

Family Adaptation. The relationships among the measures of the model and the FAM have already been presented in the preceding sections, therefore they are not presented here.

In summary, the observed relationships among the dimensions of the model were consistent with the expected pattern of relationships, although a few of exceptions were noted. Correlations involving both the FSI and Coping Patterns II and III of the CHIP were not consistent with the model (i.e., correlations were weak and nonsignificant). Correlations involving the measures of global appraisals and community resources were also somewhat inconsistent with the expected relationships (e.g., correlations between measures of these two factors and the other dimensions of the model were not lower). Moderate correlations (i.e., .3 to .6) were observed between the measure of family adaptation and measures of pileups, personal/family resources, situational appraisals and problem solving and coping (i.e., Coping Pattern

I). A slightly lower, significant correlation was also observed between the one measure of global appraisals (i.e., Reframing subscale) and General Scale of the FAM.

Phase III. Clinical Utility of the T-Double ABCX Model

Results of the comparative analysis of parental responses on measures related to the T-Double ABCX model and on a measure of perceived service needs are presented in the following sections.

Comparative Analyses

The Family Needs Survey (FNS)

Comparisons with the Bailey Study (in press). Mothers and fathers in the present study identified considerably more family service needs as priorities than mothers and fathers in the Bailey study. The percentage of items rated as "definitely important" on each of the seven subscales fell at or above 50% on 27/35 items for mothers and 25/35 items for fathers (see Table 9). Only three items were rated as "definitely important" by less than 30% of the mothers and fathers. In contrast, the percentage of items rated as important by parents in the Bailey study was at or below 30% for all but three items on the Information subscale.

Differences between Mothers and Fathers. The profile of family service needs expressed by mothers and fathers on the FNS were very similar, with independent t-tests of means yielding nonsignificant differences. In contrast, mothers in the Bailey study reported significantly greater needs on virtually every item on the subscales of the FNS than did fathers in the same study.

Correlation Analyses

The intercorrelations among the FNS subscales were positive, moderate and significant ($\underline{r}$=.42 to .68, $\underline{p}$=.000) with one exception (see Table 10). Results of the correlation analyses (see Tables E-1 to E-5, Appendix E) indicated that few significant correlations (i.e., $\underline{p}$<.01) were observed between scores on the FNS subscales and measures of the model; all of which were relatively low (i.e., below .40). In terms of the pileup dimension (see Table E-1), 6 out of 49 correlations between the FNS subscales and the Child Domain of the PSI were significant at the alpha .01 level (N.B., for five additional correlations, $\underline{p}$< .025). Significant correlations were observed between

Table 9. Percentage of "Very Important" Responses by Item for Mothers and Fathers.

Item	Mothers	n = 44	Fathers	n = 27
A. Information	**Study**	**Bailey**	**Study**	**Bailey**
1. How children grow and develop.	81.8	42.0	85.2	33.0
2. How to play or talk with child.	81.8	31.0	74.1	30.0
3. How to teach child.	86.4	62.0	81.5	55.0
4. Handling child's behavior.	86.4	40.0	74.1	33.0
5. Child's condition or disability	95.5	49.0	92.6	50.0
6. Current Services	95.5	60.0	88.9	62.0
7. Future Services	88.6	42.0	85.2	70.0
B. Family and Social Support				
1. Someone in my family to talk to.	88.6	22.0	81.5	10.0
2. More friends to talk to.	81.8	25.0	66.7	15.0
3. More time for myself.	65.9	47.0	48.1	21.0
4. Spousal Acceptance	68.2	20.0	77.8	9.0
5. Discussing problems/reaching solutions.	81.8	22.0	85.2	8.0
6. Supporting each other.	84.1	27.0	85.2	11.0
7. Household and child care tasks.	38.6	16.0	48.1	9.0
8. Recreational activities.	61.4	23.0	74.1	8.0
C. Financial				
1. Paying for basic expenses.	70.5	40.0	77.8	29.0
2. Special equipment .	68.2	25.0	77.8	22.0
3. Therapy, day care services.	75.0	26.0	66.7	20.0
4. Job counseling.	18.2	22.0	33.3	19.0
5. Babysitting or respite care.	56.8	20.0	66.7	12.0
6. Toys.	43.2	23.0	48.1	18.0
D. Explaining to Others				
1. My parents or in-laws.	45.5	20.0	48.1	10.0
2. Siblings.	52.3	20.0	66.7	12.0

Table 9 Cont.

Item	Mothers n = 44		Fathers n = 27	
	Study	**Bailey**	**Study**	**Bailey**
3. Friends/neighbors/strangers.	43.2	30.0	63.0	18.0
4. Other children.	45.5	30.0	48.1	18.0
5. Reading material about other families.	63.6	59.0	33.3	51.0
E. Child Care				
1. Baby-sitters or respite care.	68.2	35.0	85.2	28.0
2. Day care or preschool.	56.8	48.0	63.0	20.0
3. Church or synagogue care.	18.2	10.0	18.5	5.0
F. Professional Support				
1. Minister, priest, or rabbi.	13.6	12.0	14.8	8.0
2. Counselor.	40.9	21.0	18.5	9.0
3. Time to talk to child's teacher or therapist.	52.3	25.0	48.1	30.0
G. Community Services				
1. Other parents of children with special needs.	61.4	40.0	51.9	25.0
2. Doctor.	68.2	15.0	81.5	12.0
3. Dentist	50.0	20.0	48.1	13.0

Table 10. Intercorrelation Matrix for Parental Scores on the FNS

FNS Subscales	FNS-A	FNS-B	FNS-C	FNS-D	FNS-E	FNS-F	FNS-G
A. Information	-----	.54**	.47**	.57**	.28*	.46**	.43**
B. Family & Social Support	-----	-----	.55**	.58**	.45**	.42**	.53**
C. Finances	-----	-----	-----	.49**	.53**	.44**	.53**
D. Explaining to Others	-----	-----	-----	-----	.40**	.43**	.57**
E. Child Care	-----	-----	-----	-----	-----	.57**	.56**
F. Professional Support	-----	------	-----	-----	-----	-----	.68**
G. Community Services	-----	-----	-----	-----	-----	-----	-----

Note. * p<.01 **p<.000

scores on the Community Service subscale and the Child Domain, and between the Finances subscale and the FSI.

For the resources dimension (see Table E-2), 3 out of 42 correlations were significant at the .01 level. The Professional Support subscale was the only subscale significantly correlated with the FIRM total scale. Scores on the Professional support subscale were also significantly related to scores on the Family Strengths I and Finances subtests of the FIRM. Seven out of 91 correlations between the FNS subscales and the SSI were significant (see Table E-3). Significant correlations were observed between the Child Care subscale and the SSI. A low correlation ($p<.025$) was also observed between the Family and Social Support subscale of the FNS and the SSI. Also of note were the significant correlations observed between the Community Groups support scale on the SSI and four of the FNS subscales (Family and Social Support, Finances, Child Care, and Community Services).

As shown in Table E-4, none of the correlations between the LOT and the FNS subscales or between the Passive Appraisals subscale and the FNS subscales were significant. However, a significant correlation was observed between scores on the Family and Social Support subscale and the Reframing subscale of the FCOPES. Lower correlations ($p<.025$) were observed between the Reframing subscale and the Professional support scale of the FNS. Correlations between the CHIP and FNS subscales and between the General Scale of the FAM and the FNS subscales were nonsignificant.

In summary, the correlations between the subscales of the FNS and measures of the model were weak and nonsignificant. However, an examination of the pattern of significant correlations indicates that five of the FNS subscales (i.e., Finances, Community Services, Professional Support, Family and Social Support, and Child Care) were significantly related to measures representing four dimensions of the T-Double ABCX model (i.e., AA, BB, BBB, and CCC). The implications of these findings for clinical practice with families is discussed in the next chapter.

CHAPTER VI

Discussion

The present investigation was undertaken to evaluate the validity and clinical utility of the T-Double ABCX model for use with families in the field of early intervention. A series of preliminary analyses were undertaken to evaluate the homogeneity of the sample, as well as its representativeness to the larger population of families (i.e., the normative sample) and parents from two recent studies (i.e., McClelland, 1990; Reddon, 1989). For the purpose of highlighting those results related to the objectives of this study, the following discussion is presented in reference to the research questions outlined in Chapter III. The implications of results, limitations, and directions for future research are discussed in the final sections of this chapter.

Phase I: Preliminary Analyses

Research Question 1.

> To what extent do responses made by mothers and fathers in the present study differ significantly from the normative population on measures related to the critical dimensions of the model?

Overall, parental responses on the majority of self report measures were consistent with the normative data obtained from large samples of families. This suggests that the current sample of families did not differ significantly from other families on measures used to represent the dimensions of the model, although a few exceptions were noted. Mean scores for mothers and fathers in the present study were significantly higher than the normative population on the Child Domain of the PSI, but fell below the clinical range (i.e., 90th percentile). Of note were the 8 fathers and 15 mothers who scored above the 90th percentile; the level of child-related stress for these parents was excessive and clinically significant.

Significant differences were observed between mothers in the present study and women in the normative population on the LOT. This finding was not surprising given the nature of the normative population. What was surprising, however, was the lack of significant findings for fathers on this measure, given the assumption that demands accrue over time and would therefore negatively impact fathers' situational appraisals. Parents also reported significantly higher scores on the Passive Appraisal subscale of the FCOPES relative to the normative sample. This suggests that mothers and fathers in the present study have a relativistic view of life and a willingness to accept less than perfect solutions to all their demands.

In terms of problem-solving and coping, parents reported significantly higher mean scores on two of the three Coping Patterns of the CHIP. The higher mean scores observed on Coping Pattern II were consistent with the results reported by others (e.g., M.A. McCubbin, 1991), whereas the higher mean scores on Coping Pattern III were not. These findings suggest that parents in the present study are able to use a variety of coping behaviors to manage the demands associated with parenting a child with special needs, and to therefore adapt and function better as a family. This interpretation is consistent with the profile of scores observed on the General scale of the FAM, where mean scores for mothers and fathers fell within the average range. Similar to the PSI, a small number of parents (i.e., < 20%) obtained extreme scores on the General Scale of the FAM, indicating problems in family functioning and adaptation for these parents.

Research Question 2.

> To what extent do responses made by mothers and fathers in the present study differ significantly from each other on measures related to the critical dimensions of the model?

Very few significant differences were observed between parental scores on the self report measures. Significant differences were observed on the Demandingness subscale of the PSI for specific husband-wife pairs, and between mothers and fathers and husband-wife pairs on the Co-worker support scale of the SSI (N.B., the majority of mothers were not employed outside the home) and on Coping Pattern III (understanding the health care situation) of the CHIP. According to the information reported in the test manuals for the PSI and the CHIP, significant differences between mothers and fathers were expected on these two measures. Although inconsistent with expected trends, the nonsignificant findings were consistent with the results reported by Reddon (1989) and McClelland (1990).

These results suggest a substantial amount of congruence between mothers and fathers in the present study regarding their experience of demands, resources, appraisals, coping, and family adaptation. It is important to note, however, that differences between mothers and fathers could have been obscured if the questionnaires were not completed independently. The number of scores outside the stated parameters on the validity scales of the FIRM and FAM suggest that, for some parents, self-disclosure may have been affected, possibly obscuring mother-father differences as well.

Research Question 3.

> To what extent do responses made by mothers and fathers in the present study differ significantly from mothers and fathers in the Reddon (1989) and McClelland (1990) studies on measures related to the critical dimensions of the model?

Results indicated a moderate amount of congruence between the demands, resources, and adaptation experienced by parents in the present study and parents in the Reddon (1989) and McClelland (1990) studies. Once again, a number of exceptions were observed. Mothers and fathers in the present study reported clinically lower demands associated with their children than parents in both the Reddon (1989) and McClelland (1990) studies. However, significant differences on the Child Domain of the PSI were observed between mothers and fathers in the present study and the McClelland (1990) study, only.

On a measure of personal and family resources, parents in the present study reported significantly lower family resources than parents in the Reddon (1989) study. Significant differences were observed between fathers in the present study and fathers in the Reddon (1989) and McClelland (1990) studies on a measure of community and social support. Mothers in the present study also reported significantly higher mean scores than mothers in both studies on Coping Pattern I, and mothers in the Reddon (1989) study on Coping Pattern III of the CHIP. Fathers reported significantly higher mean scores on all three Coping subscales than fathers in the prior studies, with one exception. Similar levels of coping were observed between fathers in the present study and the McClelland (1990) study on the third coping dimension.

Given the smaller samples used in the two prior studies, firm conclusions regarding the presence of definitive urban-rural differences cannot be made. However, a number of observations can be made. The finding of significant differences between parents in the present study (especially fathers) and parents in the two urban studies on the CHIP may indicate that rural parents use a broader base of coping strategies to manage the demands inherent in raising a child with special needs. Similarly, the finding of significant differences on the SSI between fathers in the three studies may also suggest that rural fathers perceive themselves as receiving significantly more support from their informal and formal social networks than do their urban counterparts.

The clinically lower mean scores on the Child domain of the PSI between parents in the three studies may also be indicative of urban-rural differnces, although further research replicating this finding with a larger sample of urban parents who have a broader range of children with special needs is required. Finally, the virtually identical mean scores on the General Scale of the FAM across the three studies suggests that although differences in resources and coping may exist, urban and rural families do not differ significantly with respect to family functioning and adaptation.

Phase II: Validity of the T-Double ABCX Model

Correlation Analyses

Research Question 1.

> To what extent do the observed relationships among the dimensions of the model (i.e., AA, BB, BBB, CC, CCC and PSC factors) indicate a similar pattern as postulated by the T-Double ABCX model?

Correlations among the dimensions of the model were generally consistent with the expected pattern of relationships. Correlations among measures of the AA, BB, CC, and PSC dimensions were moderate and significant. Also consistent with the model were the nonsignificant correlations between the measures of global appraisals (CCC) and the measure of community resources (BBB). However, the expectation of lower correlations between the CCC factor and the other dimensions of the model (i.e., AA, BB and PSC), compared to the observed correlations for the CC factor were not observed. Similarly, the correlations between the BBB factor and other dimensions of the model were not consistently lower than correlations observed for the BB factor. This suggests that the correlations pertaining to the appraisal factors and the resources factors may share a substantial amount of common variance.

Thus, in more sophisticated analyses (e.g., multiple regression), some of these correlations may not be statistically significant. The lack of significant correlations between the measures of global appraisals or between either of these measures and the measure of situational appraisals, however, could indicate that the amount of overlapping variance between the CC and CCC factors and the other dimensions of the model is lower than for the BB and BBB factors. Further research controlling for the potential confounding influences of other variables in the model is necessary to determine the extent of collinearity among measures of the dimensions of the model.

Research Question 2.

> To what extent do the observed relationships between the dimensions of the model and family adaptation indicate a similar pattern as postulated by the T-Double ABCX model?

1. Pile-ups. In crisis situations, the pile up of stressors and strains is related to family adaptation, and this is a negative relationship.

The pile-up of demands due to child-related stressors were significantly related to reduced levels of family functioning in the present study. The pile-up of demands due to negative life events was not significantly correlated with the measure of family functioning.

2. Personal and Family Resources. In crisis situations, the family resources are related to family adaptation, and this is a positive relationship.

In the present study, personal and family resources were significantly related to family adaptation, and this relationship was a positive one.

3. Community Resources. In crisis situations, the breadth and depth of the family's social support are related to family adaptation, and these are positive relationships.

Perceived levels of support and community resources were not significantly related to family adaptation and functioning in the present study.

4. Situational Appraisals. In crisis situations, the family's positive appraisal of the situation is related to family adaptation, and this is a positive relationship.

Positive situational appraisals were significantly related to healthy family adaptation in the present study.

5. Global Orientation. The family's sense of coherence, a world view of a crisis situation, is related to family adaptation, and this is a positive relationship.

In the present study, one of the measures of global appraisals (i.e., the Reframing subscale) was significantly related to healthy family adaptation. A lower correlation ($p<.025$) was observed between the second measure of global appraisals (i.e., the Passive Appraisals subscale) and family adaptation, indicating a possible trend.

6. Problem Solving and Coping. The range and depth of the family's repertoire of coping strategies when employed to manage a crisis situation, are related to the level of family adaptation, and these are positive relationships.

Increased coping efforts reflected by the first Coping Pattern of the CHIP were significantly related to healthy family adaptation in the present study. Coping behaviors comprising the second and third Coping Patterns, however, were not significantly related to family adaptation.

In summary, results of the correlation analyses indicate that the observed relationships between the dimensions of the model and family adaptation were generally consistent with the model. The nonsignificant correlation between measures of community resources and family adaptation, and between two subscales of the CHIP (PSC) and family adaptation were inconsistent with the expected relationship, however. These latter results could be due to the inability of the measures used to effectively represent those constructs or they could also be an indication that the community resources factor and family coping dimension impact family adaptation indirectly (i.e., through their relationship with some other dimension of the model).

Phase III: Clinical Validity of the T-Double ABCX Model

Research Question 1

> To what extent do responses made by mothers and fathers in the present study differ significantly from mothers and fathers in the Bailey et al., (1991) study on a measure of perceived service needs?

Results indicated that parents in the present study perceived themselves as having considerably more service needs than parents in the Bailey study on all seven subscales of the FNS. The percentage of items rated as "definitely important" on each of the seven subscales fell at or above 50% on 27/35 items for mothers and 25/35 items for fathers. In contrast, the percentage of items rated as important by parents in the Bailey study was at or below 30% for all but three items on the Information subscale.

These findings could be due to differences in service levels between the two samples; families in the Bailey study were all participating in an early intervention program, whereas families in the present study did not have access to early intervention programs, although a number of special services (e.g., funding for a part-time rehabilitation aid, occupational therapy etc.) were accessible to the majority of these families.

Research Question 2.

> To what extent do responses made by mothers and fathers in the present study differ significantly from each other on a measure of perceived service needs?

Similar to parental scores on the other self-report measures, significant differences between the scores for mothers and fathers on the subscales of the FNS were not observed. This finding is inconsistent with the results reported by Bailey and his colleagues (1991) where significant differences between mothers and fathers on the FNS subscales were observed. These results suggest that the mothers and fathers in the present study were very consistent in terms of their perceptions of priority service needs.

Research Question 3.

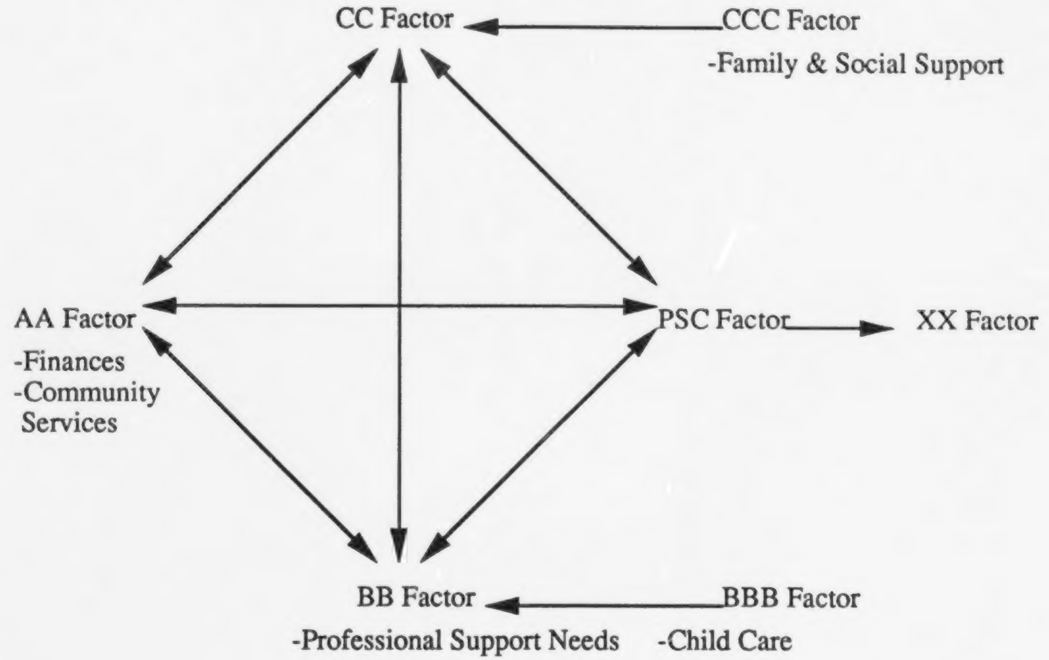
> Are the inferences drawn from the model regarding family needs consistent with the expressed needs identified by the family?

Correlations between the subscales of the FNS and the dimensions of the model were generally weak and nonsignificant. Out of 280 correlations, 18 were significant ($p \leq .01$). These findings could be an indication that inferences drawn from the model regarding family needs are virtually independent of expressed service needs identified by the family. An examination of the significant correlations, however, indicates a pattern between five of the seven FNS subscales and four dimensions of the model. As depicted by Figure 7, some expressed family needs (i.e., Finances, Community Services, Professional Support, Family and Social Support, and Child Care) were significantly correlated with specific measures of the respective dimensions of the model. Thus, the needs reflected by subscales of the FNS appear to be capable of identifying specific dimensions of the model. These findings suggest the presence of a consistent pattern between family needs identified by parents and family needs implied from measures of the model.

Correlations between the Information and Explaining to Others subscales and measures of the model were nonsignificant indicating that expressed needs in these areas may be independent of the constructs reflected in the model. The nonsignificant correlations observed between the FNS and the Passive Appraisal subscale of the FCOPES (CCC) suggest that this measure of global appraisals may also be independent of expressed family service needs as measured by the FNS.

Nonsignificant correlations were also observed between the FNS and both the coping and family adaptation factors. These findings may indicate that family coping and adaptation are stable traits that are unrelated to the continually changing family needs. It is also plausible, however, that the nonsignificant findings were due to one or more of the FNS subscales performing as "suppressor variables" in the correlation analyses. For example, the "real relationship" between the measure of family adaptation and a particular subscale of the FNS may have been suppressed by the relationship(s) between family adaptation and another subscale of the FNS (Smith & Glass, 1987). Hence, when the latter relationship is partialed out, the effect of the hypothetical FNS subscale on the predictability of family adaptation emerges. Further research examining the predictive ability of the FNS subscales in relation to the criterion variable of family adaptation is necessary to determine the exact nature of these relationships.

Figure 7.
Summary of Significant correlations ($\underline{P} \leq .01$) between Subscales of the FNS and Dimensions of the Model


CC Factor
CCC Factor
-Family & Social Support
AA Factor
-Finances
-Community Services
PSC Factor
XX Factor
BB Factor
-Professional Support Needs
BBB Factor
-Child Care

Limitations

The design used in the present study was correlational. An inherent weakness in this type of design is the inability to make causal inferences. Conclusions based on the results of this study must therefore be examined with this important caveat in mind. As noted previously, scores for mothers and fathers were treated as independent, and large numbers of correlations were computed in the analyses. These procedures may have resulted in inflated correlation values (due to the amount of shared variance between the correlations for husband-wife pairs) as well as an increase in Type I errors. Thus, although the significance levels for the statistical tests of correlations were set at alpha .01, the generalizability of these findings may be somewhat limited.

Another problem associated with correlational research concerns the fact that results from this type of design are particularly vulnerable to inadequacies in measurement and sampling methods. Procedures for controlling for these limitations were discussed previously in Chapter IV. The procedures used for sample selection, however, limit the generalizability of results given that participants were volunteers recruited from a particular agency in a specified geographical region. Not all eligible families agreed to participate and the number of female participants compared to male participants was almost double. Consequently, the significant correlations observed between variable pairs could have been due to the influence of some other variable(s) not measured in the present study.

The lack of assurance regarding whether self report instruments were completed independently by mothers and fathers was another procedural limitation for this study. Nonindependent completion of questionnaires by mothers and fathers could have obscured mother-father differences and increased the probability of committing Type I errors in the statistical analyses. The number of scores outside the stated parameters on the validity scales of the FIRM and the FAM suggested that self-disclosure may have been adversely affected, possibly obscuring mother-father differences as well. The method in which the data were gathered for parents with limited reading skills did not facilitate confidentiality, and therefor may have influenced the social desirability/defensiveness of their responses. Despite these limitations in sampling and measurement, however, data obtained on the majority of self report measures were consistent with normative data obtained from large samples of families and the families in the two prior studies (i.e., McClelland, 1990; Reddon, 1989). This suggests that the current sample of parents were representative of other groups of parents on the dimensions of the model. Extreme scores on the validity scales of the FAM and the FIRM were observed for two of the six persons with limited reading skills.

Finally, given that this study did not assess family adaptation over time, it is conceivable that variations in responses could have occurred as a function of different points in time. The adaptation of siblings was also not examined in the present study, restricting the generalizability of these results to the adaptation of parents, rather than the family unit as a whole.

Implications and Directions for Future Research

Theoretical

The results of the present study provide moderate support for the validity of the T-Double ABCX model as a framework for explaining adaptation and functioning in families of preschool children with special needs. Evidence supporting the hypothesized relationships between the dimensions of the model and a measure of family adaptation was found. Moderate support regarding the effectiveness of the measures used to represent the model was also demonstrated.

In terms of a test of the validity of the model, however, this study was limited in two important respects. First, as highlighted throughout the discussion chapter, bivariate correlations could only provide information about the index of association between the specific dimensions of the model. Thus, whether or not the observed correlations among the dimensions of the model were confounded with the influence of another variable could not be determined at this level of analysis. Similarly, the extent that the observed correlations were inflated due to substantial amounts of overlapping variance could not be determined. Second, because of the inherent weaknesses in correlational designs (e.g., inability to randomize, manipulate the independent variables, or partial out the influence of confounding variables), causal inferences regarding the pattern of relationships could not be made. Thus, interpretations of the observed patterns of relationships were limited to identifying whether or not the patterns were consistent with the model.

In order to conduct a stronger test of the validity of the model, the data gathered in the present needs to be incorporated into a LISREL analyses to: (a) determine the causal nature among the dimensions of the model and evaluate the model as a whole; and (b) determine whether or not the results from these analyses replicate the findings reported by Lavee et. al (1987).

In terms of the measures used to represent the dimensions of the model, a moderate amount of integrity among some of these measures was observed (i.e., AA, BB, CC and XX). However, given many of the inconsistencies observed, a more extensive construct validation of these measures is necessary. For example, the problem solving and coping dimension should function as a culminating dimension of the model, yet correlations involving the measure of this dimension were weak and inconsistent. The findings related to the two measures of global appraisals were also inconsistent, suggesting that these measures may not be the most effective measures for representing the CCC dimension.

Clinical

A review of the evidence from a number of family focused intervention studies (e. g., Achenbach et al., 1990; Barrera, Rosenbaum, & Cunningham, 1986; Belsky, 1985; Davis & Rushton, 1991; Seitz, Rosenbaum, & Apfel, 1985) suggests that these approaches have beneficial, immediate effects for both children and their families. What remains unclear, however, is exactly what aspects of these interventions are effective and under what circumstances. An examination of the treatment procedures outlined in many of these studies clearly demonstrates components related to family stress management, specific teaching skills, coping and problem-solving acquisition, resource and support utilization and family perceptions. Few studies, however, have isolated these components in such a manner as to systematically examine their main and/or interactive effects. What appears to be lacking are multidimensional frameworks where the needs of the child and family can be assessed along several of these dimensions.

Conceptually, the T-Double ABCX model has been demonstrated to be well suited for the dual purposes of integrating research and guiding clinical practice with families. The second objective of the present study was to examine the clinical utility of the T-Double ABCX model by evaluating the degree of similarity between family needs identified by parents (as measured by the FNS) and family needs inferred from

Conceptually, the T-Double ABCX model has been demonstrated to be well suited for the dual purposes of integrating research and guiding clinical practice with families. The second objective of the present study was to examine the clinical utility of the T-Double ABCX model by evaluating the degree of similarity between family needs identified by parents (as measured by the FNS) and family needs inferred from measures of the model. Results indicated a consistent pattern of relationships between some of the family needs identified by parents and family needs inferred from the respective dimensions of the model. In terms of clinical practice, these results indicate that some of the subscales of the FNS are related to important aspects of family functioning (i.e., pileups, resources, appraisals). As such, these subscales could be very helpful for identifying family needs related to specific dimensions of the model. The information gathered from the FIRM and FAM suggests that these two measures would also be useful for assessing family needs and planning family goals in early intervention.

Another interesting finding was the lack of significant differences between mothers and fathers on virtually all of the self-report measures. This finding indicates that mothers and fathers may benefit equally from clinical programs developed to enhance family functioning and adaptation. The substantial number of service needs expressed by families in the present study compared to the normative population underscores the need for increased services and programs in rural Alberta.

In conclusion, the results of the present study served as another step in the process of validating the theoretical and clinical validity of the T-Double ABCX model. Further research exploring the causal pattern of relationships among the dimensions of the model, the relationships between parental perceptions of service needs and family adaptation are necessary.

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APPENDIX A

LETTER OF INTENT, PROTOCOL AND CONSENT FORMS

INITIAL CONSENT FORM

I/We ________________________________ may wish to participate in this research project. I/We would like to participate in the first meeting and make our final decision following that information session.

Name ______________________________

Date________________________________

Name_______________________________

Date_______________________________

I/We may be reached at the following numbers:

Home_______________________________

Work_______________________________

Please return this form to the coordinator or supervisor of your program.

Final Consent Form

I/We _________________ have participated in the initial meeting related to this project. I/We understand the nature and intent of this project and are willing to participate. I/We understand that any information given will be treated as anonymous and confidential and that I/We have the right to withdraw from this project at any point in time should I/We see fit.

Signature ________________________________

Date ___________________________________

Signature ___________________________________

Date___________________________________

Dear Parents,

Families with young children are increasingly involved with community services such as health units and child care services. A number of programs have developed over the past several years to provide specific support to families with young children having developmental needs. As a graduate student at the University of Alberta, I am particularly interested in learning more about family's experiences meeting their child's needs at this early stage of development.

Because of your unique experience as a parent raising a child at this developmental stage (birth to 5 1/2 years), we felt you could help us in this matter. We are interested in looking at three aspects of family experiences:

(1) The demands encountered by families in raising young children with developmental needs;

(2) The unique family characteristics, strengths, as well as personal and community resources that families draw upon to meet those demands;

(3) The service needs (both health and developmental) that families feel are priorities.

Thus, we are asking for your participation in this project. Your participation would involve an introductory meeting (approximately 30 minutes) as well as the completion of a set of questionnaires related to the three areas just mentioned. The total time involved for completion of the questionnaires is expected to be about two hours.

Should you agree to participate in this project, arrangements will be made to meet with you to explain aspects of the project as well as to allow you to make a final decision regarding your participation. Details concerning the questionnaires will also be discussed at this time.

Your participation in this project is entirely up to you and you would be free to withdraw at any time you felt necessary. All information gathered in this project will be used to assist in the further development of our understanding of the needs of families with young children. In addition, all information obtained in this project will be confidential and anonymous. Your names will not be placed on any of the questionnaires and the information collected will be treated as one large group. Hence, your privacy and confidentiality will be ensured.

Your participation and cooperation in this project would be greatly appreciated. Thank you for your time in reading this letter. We look forward to your participation.

Sincerely,

Caroline J.Redington B.A. Graduate Student (584-3738) University of Alberta	Gerard Kysela Ph.D Professor (492-5026) University of Alberta

Protocol for Initial Meeting

A. Introduction

Review purpose, intent, procedures to protect ethical and legal rights, activities and time commitments required to ensure participants understand the nature of the project and the activities required:

Purpose

You will recall that the purpose of this project is for us to learn more about the family's experience meeting their child's needs at the pre-school stage of development (birth to 5 1/2 years). Moreover, because of your unique experience as a parent raising a child at this developmental stage , we felt you could help us in this matter. To do this we will be looking at three aspects of family experiences:

(1) The demands encountered by families in raising young children with developmental needs;

(2) The unique family characteristics, strengths, as well as personal and community resources that families draw upon to meet those demands;

(3) The service needs (both health and developmental) that families feel are priorities.

Intent

The intent of this project is to learn about the family's experiences in raising their young child having developmental needs so that recommendations for service delivery can be made.

Time Commitments/Activities

Your participation will involve approximately two hours of your time in the completion of questionnaires related to stress, family characteristics, coping strategies, personal and social resources, and priority service needs.

Implications:

The assessment of experiences and needs in families of young children at your child's level of development may bring up issues for you that you feel are not being addressed. We will be available to address your questions and concerns related to this study. As well, we will make recommendations for a referral for should you desire additional information or services. The intent of this investigation is to use this information to make recommendations to programs for improved service delivery.

Legal/Ethical Procedures: In the interests of protecting your legal and ethical rights, the following procedures will be incorporated: (1) Confidentiality/ Anonymity: All questionnaires will be coded numerically, identifying information will not be placed on any of the questionnaires you fill out. (2) Options to stop: If at at any point in time you are uncomfortable with any of the proceedings, you will have the right to withdraw.

Final Debriefing: After the results of the project data are compiled and analyzed, we will sending a brief summary of the results to you and the staff at the Health Unit. Should you desire a follow-up meeting to discuss the general findings of the study arrangements can also be made.

B. Obtain final written consent

Determine whether parents are still interested in participating in the project. If so, obtain final written consent.

C. Structured Interview

Utilizing a structured interview format, obtain information related to family demographics and child's medical history.

D. Completion of Questionnaires

Introduce questionnaires and provide instruction regarding completion. Address questions/concerns pertaining to content, length, format etc. Upon completion, provide parents with two contact telephone numbers in the event of follow-up questions or concerns.

Table A-1. Summary of Instruments and Order of presentation

Instrument	Dimension measured
1. FSI: Total	AA
2. PSI: Child Domain	AA
3. FCOPES: Reframing subscale and Passive Appraisals subscales	CCC
4. FIRM	BB
5. LOT	CCC
6. CHIP	PSC
7. FAM	XX
8. SSI	BBB
9. FNS	Family Needs

Note. Instruments are presented in the same sequence used in the study. In the study, instruments were presented in an order that alternated tests in terms of their length and content (e.g., lengthier instruments requiring more depth of responding, such as the FIRM, were interspersed between tests shorter in length and requiring less depth).

APPENDIX B

DEMOGRAPHIC INFORMATION

Table B-1. Summary of Selected Parent Demographic Characteristics

Characteristic	Location #1	Location #2	Location #3	Location #4
Education: (Mothers): Less than 7 yrs.	------	1	------	-------
-Junior High-school	------	1	------	1
-Partial Sr. High-school	------	4	------	1
-High-school Graduate	10	4	2	12
-Partial College	2	-----	------	3
-University Graduate	1	2	------	-----
Education: (Fathers) Not/Applicable	1	1	------	2
-Less than 7 yrs.	1	------	------	1
-Junior High-school	-----	2	------	3
-Partial Sr. High-school	-----	2	1	3
-High-school Graduate	10	4	1	7
-Partial College	1	1	------	1
-University Graduate	-----	1	------	------
-Graduate/Professional Training	------	1	------	------
Occupation: Mothers				
-Full-time Caregiver	11	9	2	15
-Skilled manual occupations	------	1	------	-------
-Owners of little businesses, sales workers, technicians, semi-professionals.	2	------	------	2
-Administrative personnel of large concerns, owners of small, independent businesses and semi-professionals.	------	------	------	------
-Lesser Professionals, managers and proprietors of medium sized businesses	------	2	------	------
Occupation: (Fathers)				
-Menial labor positions	-----	-----	------	3
-Unskilled Workers	-----	1	------	------
-Semi-Skilled Workers	-----	1	1	1
-Skilled Workers	1	5	1	7
-Owners of little businesses, clerical and - sales workers.	-----	1	------	1
-Technicians, semi-professionals, small business owners.	4	1	-------	2
-Owners of small, independent businesses and semi-professionals.	2	1	------	1
-Major professionals, executives, and proprietors of large concerns	------	1	-----	------

Table B-2. Summary of Selected Child Demographic Characteristics

Characteristic	Location #1	Location #2	Location #3	Location #4
Severity Level				
Not Provided	12	4	------	7
Mild	------	------	------	2
Mild/Moderate	------	------	------	1
Moderate	------	4	------	3
Moderate/Severe	------	-----	------	3
Severe	------	1	1	1
Profound	1	3	1	------
Diagnosis				
Not Provided	4	4	1	10
Spina Bifida	-----	2	------	------
Spina Bifida with Hydrocephalus	1	1	------	1
Hydrocephalus	1	------	------	------
Cleft Palate & Lip	1	------	------	1
Club Foot/Physical Abnormalities	-----	------	------	1
Heart Problems	1	------	------	-------
Allergies/Asthma	1	------	------	1
Sensory Impairments	-----	3	1	1
Fluid in the Ears	------	1	------	------
Cerebral Palsy	------	1	------	1
Brachial Plexus Palsy	1	------	------	------
Brain Injury	1	------	-------	------
Down Syndrome	1	------	-------	------
Pervasive Developmental Disorder	1	------	-------	------
Multiple Physical Handicapping Conditions	------	-------	------	1

Table B-3. Identified Need Areas

Problem #1

Problem #2	Speech/ Articulation	Language/ Comm.	Global Delay	Cognition	Physical/ Motor	Medical Conditions	Sensory Impairmer
Not Provided	6	4	2	-----	6	4	2
Language	4	-----	3	-----	-----	------	1
Global Delay	1	-----	-----	-----	-----	-----	-----
Cognition	-----	1	-----	-----	-----	-----	-----
Physical	-----	-----	-----	1	-----	-----	-----
Sensory	-----	1	2	-----	-----	-----	-----
Medical	1	-----	-----	-----	3	-----	-----
Behavior	-----	1	-----	-----	-----	-----	-----
Cognition/ Behavior	-----	1	-----	-----	-----	-----	-----

Table B-4. Results of one-way ANOVA

Scale	F Probability	Scheffe's (p<.05)
FSI: Total	.6588	N.S.
PSI: Child Domain	.0778	N.S.
Distractibility	.0676	N.S.
Maternal Reinforcement	.2792	N.S.
Child Mood	.0717	N.S.
Acceptability	.3852	N.S.
Adaptability	.2183	N.S.
Demandingness	.2746	N.S.
FCOPES: Reframing	.5421	N.S.
Passive Appraisals	.4282	N.S.
FIRM: Total	.0001	Groups 1 and 4; Groups 1 and 2
Esteem/Communication	.0319	N.S.
Mastery and Health	.0061	Groups 1 and 4
Financial Support	.0002	Groups 1 and 4; Groups 1 and 2
Extended Family Support	.0079	Groups 1 and 4
Social Desirability	.1383	N.S.
LOT: Total	.2069	N.S.
CHIP: Coping Pattern I	.6638	N.S.
Coping Pattern II	.3276	N.S.
Coping Pattern III	.7210	N.S.
FAM: Total	.0913	N.S.
Task Accomplishment	.2109	N.S.
Role Performance	.1942	N.S.
Communication	.0703	N.S.
Affective Expression	.4983	N.S.
Affective Involvement	.0565	N.S.
Control	.0307	N.S.
Values & Norms	.3566	N.S.
Social Desirability	.6890	N.S.
Defensiveness	.1494	N.S.
		N.S.
SSI: Total	.1522	N.S.

Table B-4 Cont.

Scale	F Probability	Scheffe's (p<.05)
Spouse	.0125	Groups 1 and 4
Children	.5728	N.S.
Relatives	.0586	N.S.
Friends	.2262	N.S.
Co-workers	.4605	N.S.
Church/Synagogue	.6049	N.S.
Spiritual Beliefs	.2761	N.S.
Community Groups	.0510	N.S.
Professionals	.7401	N.S.
Special Groups	.0008	Groups 1 and 4
TV/Books	.4215	N.S.
Other	.6128	N.S.

APPENDIX C

SIGNIFICANCE LEVELS BETWEEN MEAN SCORES FOR MOTHERS AND FATHERS AND HUSBAND-WIFE PAIRS ON SELF REPORT MEASURES

Table C-1. Comparative Analyses of Mean scores between Mothers and Fathers and Husband-Wife pairs.

SCALE	MOTHER-FATHER PAIRS (p values)	HUSBAND-WIFE PAIRS (p-values)
FSI: TOTAL	.833	.644
PSI: CHILD DOMAIN	.410	.088
Distractibility	.388	.736
Maternal Reinforcement	.375	.497
Child Mood	.558	.247
Acceptability	.651	.363
Adaptability	.874	.553
Demandingness	.456	.014
FCOPES: Reframing	.853	.973
Passive Appraisals	.710	1.00
FIRM: TOTAL	.387	.651
Esteem/Communication	.127	.151
Mastery and Health	.942	.859
Financial Support	.209	.334
Extended Family Support	.597	.092
Social Desirability	.809	.474
LOT: TOTAL	.379	.784
CHIP: Coping Pattern I	.581	.096
Coping Pattern II	.598	.525
Coping Pattern III	.003	.001
FAM: TOTAL	.972	.706
Task Accomplishment	.943	.932
Role Performance	.217	.927
Communication	.151	.100
Affective Expression	.700	.631
Affective Involvement	.872	.886
Control	.612	.590
Values & Norms	.500	.736

Table C-1. Cont.

SCALE	MOTHER-FATHER PAIRS (p values)	HUSBAND-WIFE PAIRS (p-values)
Social Desirability	.506	.606
Defensiveness	.422	.973
SSI: TOTAL	.245	.195
Spouse	.191	.097
Children	.219	.474
Relatives	.680	.900
Friends	.360	.392
Co-workers	.000	.000
Church/Synagogue	.775	.405
Spiritual Beliefs	.990	.000
Community Groups	.482	.336
Professionals	.132	.249
Special Groups	.851	1.00
TV/Books	.915	.826
Other	.430	.753

APPENDIX D

INTERCORRELATION MATRICES

Table D-1. Intercorrelation Matrix for the PSI.

	PSI-1	PSI-2	PSI-3	PSI-4	PSI-5	PSI-6
Child Domain	.89****	.72****	.87****	.75****	.72****	.28**
1. Adaptability	------	.60****	.71****	.67****	.55****	----
2. Acceptability	------	------	.59****	.45****	.30**	.29**
3. Demandingness	------	------	------	.58****	.49****	----
4. Mood	------	------	------	------	.46****	.20
5. Distractibility	------	------	------	------	------	-----
6. Reinforcement	------	------	------	------	------	-----
FSI	------	------	------	------	------	-----

Table B-2. Intercorrelation Matrix for the FIRM

	FIRM-1	FIRM-2	FIRM-3	FIRM-4	FIRM-5	FIRM
1. Esteem & Communication	----	.49****	.52****	.46****	.45****	.78****
2. Mastery/Health	----	----	.54****	.39****	.56****	.84****
3. Finances	----	----	----	.3***	.36***	.83****
4. Extended Family Support	----	----	----	----	----	.58****
5. Social Desirability	----	----	----	----	----	.54****
SSI	----	----	----	----	----	.39***

Note. All correlations below p<.05 were omitted.

* p<.025, ** p<.01, *** p<.001

Table D-3. Intercorrelation Matrix for the SSI

Support Scale	2	3	4	5	6	7	8	9	10	11	12
1. Spouse	.39****	.59****	.41****	.20	----	----	.22	----	.27*	----	----
2. Children	----	.53****	.55****	.28**	----	.24*	.25*	----	----	----	----
3. Relatives	----	----	.63****	.39****	.23	.32**	.43****	.34**	.23	----	----
4. Friends	----	----	----	.43****	.28***	.24*	.48****	.27***	----	----	----
5. Co-Workers	----	----	----	----	.24*	----	.41****	----	----	----	----
6. Church/ Synagogue	----	----	----	----	----	.72****	.47****	.37***	.36***	.26**	.28**
7. Spiritual Beliefs	----	----	----	----	----	----	.49****	.42****	.41****	.35***	----
8. Community Groups	----	----	----	----	----	----	----	.53****	.53****	----	----
9. Professional Groups	----	----	----	----	----	----	----	----	.36***	.49****	----
10. Special Groups	----	----	----	----	----	----	----	----	----	----	----
11 TV/Books	----	----	----	----	----	----	----	----	----	----	----
12. Other	----	----	----	----	----	----	----	----	----	----	----

Note. All correlations below p<.05 were omitted.
* p<.025; **p<.01; ***p<.001; ****p<.000.
Redington

Note. All correlations below p<.05 were omitted.

* p<.025, ** p<.01, *** p<.001

Redington

Table D-4. Intercorrelation Matrix for the Resources Dimension

SSI Scale	FIRM-1	FIRM-2	FIRM-3	FIRM-4	FIRM-5	FIRM
1. Spouse	.56****	.44****	.42****	.26*	.37***	.51****
2. Children	.37***	----	.29**	----	----	.22
3. Relatives	.38***	.33**	.62****	.34**	----	.47****
4. Friends	.31**	.20	.33**	.24*	----	.32**
5. Co-Workers	----	----	----	.23	----	----
6. Church/ Synagogue	----	----	----	----	----	----
7. Spiritual Beliefs	----	----	.32**	----	----	----
8. Community Groups	.24*	.32**	.50****	.36***	----	.42****
9. Professional Groups	----	.23	.42****	----	-----	.22
10. Special Groups	.25*	.19	.21	.30**	----	.31**
11 TV/Books	----	----	----	----	-.21	----
12. Other	----	----	----	----	----	----

Note. All correlations below $p<.05$ were omitted.

* $p<.025$, ** $p<.01$, *** $p<.001$

Table D-5. Intercorrelation Matrix for the FAM

	FAM 1	FAM 2	FAM 3	FAM 4	FAM 5	FAM 6	FAM 7	FAM 8	FAM 9
FAM	.71 ****	.75 ****	.77 ****	.80 ****	.79 ****	.77 ****	.83 ****	-.53 ****	-.50 ****
Task Accomplishment		.54 ****	.53 ****	.55 ****	.49 ****	.40 ****	.37 ***	-.46 ****	-.53 ****
Role Performance		------	.53 ****	.46 ****	.47 ****	.46 ****	.54 ****	-.40 ****	-.38 ****
Communication		------	------	.50 ****	.61 ****	.44 ****	.63 ****	-.55 ****	-.47 ****
Affective Expression		------	------	------	.58 ****	.61 ****	.60 ****	-.42 ****	-.39 ****
Affective Involvement		------	------	------	------	.53 ****	.63 ****	-.45 ****	-.39 ****
Control		------	------	------	------	------	.69 ****	-.25 *	-.33 **
Values/Norms		------	------	------	------	------	------	-.36 ***	-.27 *
Social Desirability		------	------	------	------	------	------	------	.57 ****
Defensiveness		------	------	------	------	------	------	------	------

Note. All correlations below $p<.05$ were omitted.

* $p<.025$, ** $p<.01$, *** $p<.001$

APPENDIX E

CORRELATION MATRICES

Table E-1. Correlation Matrix for Parental Scores on the FNS and Measures of the Pile up Dimension.

	FNS-A	FNS-B	FNS-C	FNS-D	FNS-E	FNS-F	FNS-G
PSI							
Adaptability	----	----	.28**	----	.21	.24*	.32**
Acceptability	----	----	----	----	----	----	----
Demandingness	----	----	----	.24*	----	----	.26*
Mood	----	----	.27**	.27**	----	----	.32**
Distractibility	----	----	----	----	----	----	----
Reinforcement	----	----	----	----	----	----	----
Child Domain	----	----	----	----	----	.23	.28**
FSI	----	----	.36**	----	----	----	----

Table E-2. Correlation Matrix for Parental Scores on the FNS and the FIRM

	FNS-A	FNS-B	FNS-C	FNS-D	FNS-E	FNS-F	FNS-G
FIRM	----	----	----	----	----	-.27**	----
Esteem and Communication	----	----	----	----	----	-.34**	----
Mastery and Health	.23	----	----	----	----	----	----
Finances	----	----	----	----	----	-.27**	----
Extended Family Support	----	----	----	----	----	----	----
Social Desirability	----	----	----	.21	----	-.21	----

Note. All correlations below p<.05 were omitted.
FNS-A = Information; FNS-B = Family & Social Support; FNS-C = Finances; FNS-D = Explaining to Others; FNS-E = Child Care; FNS-F = Professional Support; FNS-G = Community Services.

* p<.025, ** p<.01, *** p<.001

Table E-3. Correlation Matrix for Parental Scores on the FNS and the SSI

	FNS-A	FNS-B	FNS-C	FNS-D	FNS-E	FNS-F	FNS-G
SSI	----	.24*	----	----	.29**	----	----
Spouse	----	----	----	----	----	-.23	----
Children	----	----	----	----	----	-.26*	----
Relatives	----	----	----	----	----	---	----
Friends	----	----	----	----	----	----	----
Co-workers	----	----	----	----	.26*	----	----
Church or synagogue	----	----	----	----	----	----	----
Spiritual Beliefs	----	----	----	----	.20	----	----
Community Groups	.20	.36***	.36***	----	.39***	.27*	.29**
Professionals	----	----	.31**	----	.32**	.21	----
Special Groups	----	----	----	----	----	----	----
TV/Books	----	----	----	.20	.20	.21	----
Other	----	----	----	---	----	----	----

Table E-4. Correlation Matrix for Parental Scores on the FNS and Measures of the Appraisal (LOT, Reframing and Passive Appraisals) and Coping (CHIP) Dimensions.

	FNS-A	FNS-B	FNS-C	FNS-D	FNS-E	FNS-F	FNS-G
LOT	.20	----	----	----	----	----	----
Reframing	----	-.28**	----	----	-.22	-.24*	----
Passive Appraisals	----	----	----	----	----	----	----
Coping Pattern I	----	----	----	----	----	----	----
Coping Pattern II	----	----	----	----	----	----	----
Coping Pattern III	----	----	----	.21	----	----	----

Note. All correlations below p<.05 were omitted.
FNS-A = Information; FNS-B = Family & Social Support; FNS-C = Finances; FNS-D = Explaining to Others; FNS-E = Child Care; FNS-F = Professional Support; FNS-G = Community Services.

* p<.025, ** p<.01, *** p<.001

Table E-5. Correlation Matrix for Parental Scores on the FNS and the FAM.

	FNS-A	FNS-B	FNS-C	FNS-D	FNS-E	FNS-F	FNS-G
FAM	----	----	----	----	----	----	----
Task Accomplishment	----	----	----	----	----	.23	----
Role Performance	----	----	----	----	----	----	----
Affective Expression	-.21	----	----	----	----	---	----
Affective Involvement	----	----	----	----	----	----	----
Control	-.21	----	----	-.24*	----	----	----
Values & Norms	-.25*	----	----	-.20	-.20	----	----
Social Desirability	----	----	----	----	----	----	----
Defensiveness	----	----	----	----	----	----	----

Note. All correlations below p<.05 were omitted.
FNS-A = Information; FNS-B = Family & Social Support; FNS-C = Finances; FNS-D = Explaining to Others; FNS-E = Child Care; FNS-F = Professional Support; FNS-G = Community Services.

* p<.025, ** p<.01, *** p<.001